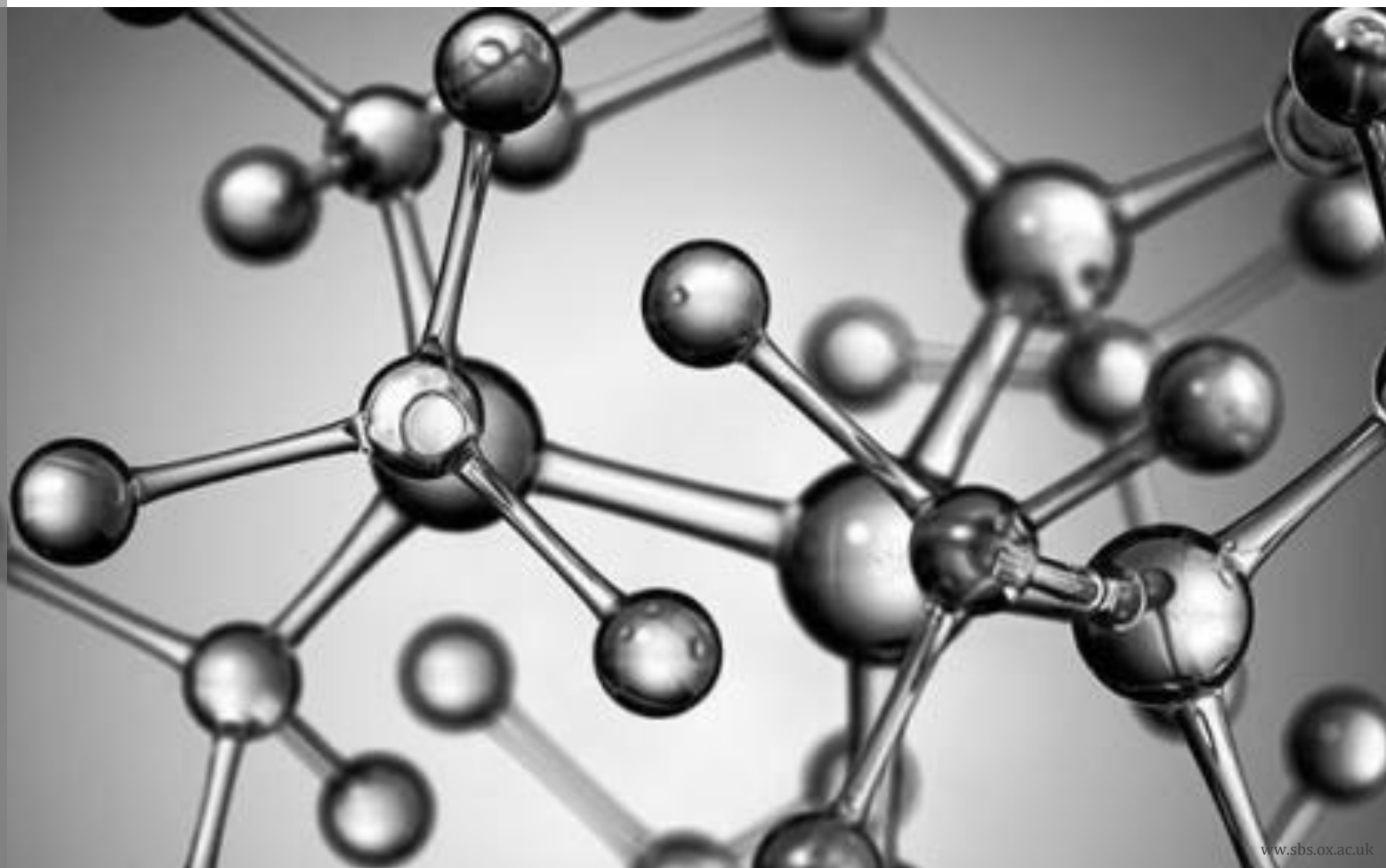


**Graduate Student Handbook
Department of Chemistry
University of Utah**



2016 - 2017

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INTRODUCTION

The Chemistry Department graduate curriculum for students entering during the 2016-2017 academic year is presented in the following pages. A summary of the requirements for a graduate degree in Chemistry with a typical timeline is presented on the next page.

The general requirements for all students studying for the Ph.D. degree are:

- successful completion of a series of courses in the first year,
- presentation of a departmental seminar in the second year,
- passing a qualifying exam in the second year,
- writing and defending a research proposal in the third year,
- writing and defending a dissertation based on a fundamental research problem.

Each requirement is presented in detail in later sections of this handbook. The requirements for the M.S. degree are set forth in section 15.

In addition to reading the information presented here, all graduate students are encouraged to examine the regulations concerning graduate study at the University of Utah Graduate School website <http://gradschool.utah.edu/current-students/>.

DEPARTMENTAL AND DEGREE REQUIREMENTS

1) REGISTRATION AND TUITION BENEFIT REQUIREMENTS

- A. Students who are present on campus and making use of University facilities (lab or office space, libraries, faculty time) must be enrolled at all times for a minimum of 3 credit hours in chemistry courses. The appropriate course for those engaged only in research is "Thesis Research", CHEM 7970; or for those only writing a thesis, "Faculty Consultation", CHEM 7980. (PLEASE NOTE: For those with special certification needs, *e.g.*, to prevent the beginning of undergraduate loan payments, it may be necessary to register for more than 3 hours per semester).
- B. Tuition Benefits will be provided for graduate students in good standing according to departmental and university rules. The number of semesters for which a student will receive tuition benefits is determined by the student's previous degree and the graduate degree currently being pursued, as described at the website <http://gradschool.utah.edu/tbp/>
1. Students in the Ph.D. program who entered with a B.S. or B.A. degree will receive five years (10 semesters) of tuition benefit support.
 2. Students in the Ph.D. program who also received a Master's degree at the University of Utah are limited to five years of tuition benefit support (2 years for the Master's + 3 additional years for the Ph.D.).
 3. Students entering the Ph.D. program with a Master's degree from another university are eligible for four years (8 semesters) of tuition benefit support.

Students in the M.S. program are limited to 2 years (4 semesters) of tuition benefits.

Students who have been supported as teaching assistants for four or more semesters may qualify for additional semesters of tuition benefits.

Timeline for Ph.D. Student Requirements:

Requirement	Due Dates
Completion of Coursework	End of Spring semester of the 1 st year
Advancement to Category I	Following satisfactory completion of coursework
Selection of Research Advisor	Advised by Dec. 15 th , of the 1 st year; Required by March 15 th of the 1 st year.
Supervisory Committee Selection	September 1 st of the 2 nd year.
Research Ethics and Safety	Must be taken before admission to Ph.D. candidacy.
Departmental Seminar	By November 15 th of 2 nd year
Pre-Oral Written Report	Must be submitted to the Graduate Coordinator and Thesis Committee on or before April 15 th of the 2 rd year.
Pre-Oral Examination	Must be completed two weeks after submitting the Written Report or by May 1 st of the 2 rd year, whichever is sooner.
Research Proposal Abstracts	Abstracts for the Written Research Proposal must be submitted to the Thesis Committee on or before December 15 th of the 3 rd year.
Written Research Proposal	Must be submitted to the Graduate Coordinator and Thesis Committee on or before February 15 th of the 3 rd year.
Defense of the Research Proposal	Must be completed two weeks after submitting the Written Report or by March 1 st of the 3 rd year, whichever is sooner.
Admission to Ph.D. Candidacy	When all of the requirements listed above are met.
Written Ph.D. Thesis	The Thesis should be submitted to the Ph.D. committee at least 14 days before the Final Ph.D. Oral Defense.
Final Ph.D. Oral Defense	The Final Oral Defense should take place at least 14 days after submission of the written Thesis.

IMPORTANT NOTE: *Failure to meet these deadlines leads to the revocation of a student's "Good Standing" status, until the pertinent requirements are met. If "Good Standing" status is not maintained, the department may revoke financial support, the tuition benefit may be revoked, and the student may be subject to dismissal from the program.*

B. Tuition Benefit (continued):

Students must be fully matriculated, receive a TA or RA stipend, maintain at least a 3.00 GPA, and be registered for the appropriate number of credit hours of graduate coursework in order to receive a tuition benefit for the academic year. **All students receiving a tuition waiver must sign the tuition benefit agreement list each semester that a waiver is received.** This list will be available on CIS (University Campus System website) at the beginning of each semester. Please see the Graduate School Tuition Benefit Guidelines (*Appendix A*) of this handbook or <http://gradschool.utah.edu/tbp/tuition-benefit-program-guidelines/> for a detailed list of criteria for receiving a tuition benefit.

Students should register for 12 credit hours for the fall and spring semesters their first year in residence. For subsequent years, students should enroll for 11 credit hours for the fall and spring semesters. All research assistant students should enroll for 3 credit hours during the summer semester. The tuition benefit expires after 5 years in residence for students entering with a B.S or B.A., 3 years for those entering with a M.S. degree from the University of Utah, and 4 years from another institution.

- C. Students must apply for Utah State Residency following completion of 40 credit hours of graduate study in order to continue to receive a tuition benefit (see section 16).
- D. Students who do not meet the "good standing" requirement of the Department and the University's as specified above, or who fail to register and sign the tuition benefit list, will be required to pay their tuition bill. Also, students who leave the department in the middle of a semester may be retroactively required to pay tuition for the semester in which they leave, if the stipend they have accrued during the semester falls below the minimum required for receipt of a tuition benefit.

Of particular relevance to incoming graduate students is the policy of the University that maintenance of a 3.00 GPA is required for graduate studies towards a Ph.D. degree. Thus, a student who fails to maintain a 3.00 GPA in their first semester of classes is no longer in good standing, and is not guaranteed financial support or a tuition benefit for the second semester. After two semesters, a student with a GPA below 3.00 will not qualify for guaranteed financial support will not receive a tuition benefit, and may be subject to dismissal from the program.

2) HEALTH INSURANCE AND PARENTAL LEAVE

Health Insurance

For the protection of its students, the Chemistry Department requires all graduate students to have health insurance. The University of Utah Graduate School has worked out a plan of coverage with United Healthcare Insurance Company to provide coverage for up to \$500,000 of expenses. See the website www.uhcsr.com/utah to view the policy brochure for the 2016-2017 academic year. The department (or the research advisor, through research grants) will pay for \$500,000 worth of coverage for all graduate students. If the student wishes to have health insurance for a spouse and/or children, the student can supplement the premiums paid by the department to purchase the additional coverage.

Students are not obligated to accept coverage through United Healthcare. If a student prefers a different insurance policy, the department will reimburse the student for the cost of insurance, up to the cost of the United Healthcare policy.

At the beginning of every semester, all graduate students are required to sign a statement that they are either accepting the United Healthcare coverage, or arranging coverage through a different company. The department uses the resulting list to make sure that all students desiring coverage through United Healthcare are indeed covered. *If a student fails to sign this statement at the beginning of each semester, the department accepts no responsibility should a claim need to be filed.*

Graduate Student Parental Leave Policy

Parental leave is available to any full time graduate student in good standing who will serve as the principle caregiver of her or his own newborn child or a partner's newborn child or of a newly adopted child (under six years of age, or a child with special needs under the age of eighteen) during the time for which leave is sought. If both parents/partners are graduate students in the Department of Chemistry, only one is eligible for parental leave.

An eligible graduate student is guaranteed parental leave no more than twice. Any subsequent requests for leave in conjunction with additional instances of birth or adoption will be subject to the approval of the Chair of the Department of Chemistry.

This policy does not apply to birth parents who do not anticipate becoming the legal parent of the child following birth. In such cases, a birth mother may be covered by sick leave and FMLA Policies.

Exceptions to these and other eligibility criteria below must be approved by the Chair of the Graduate Education Committee and the Chair of the Department of Chemistry.

Graduate students interested in applying for parental leave of absence should complete the Parental Leave application form and submit it to the Graduate Program Coordinator no fewer than three months prior to the expected arrival of the child. The person requesting leave is also required to notify her or his research advisor either prior to or as soon as the application is submitted.

Upon approval of a parental leave of absence request, (*Appendix A*) the eligible graduate student will be granted a paid parental leave of absence for a maximum of 12 weeks, starting on the date requested. Graduate students will receive their normal stipend during the duration of the leave. The graduate student will be released from professional duties during the period of parental leave. A graduate student who is granted parental leave will not be expected to maintain scholarly productivity during their leave.

No extension to this leave will be granted. If additional time is required due to medical or other reasons a non-paid FMLA leave and/or a leave of absence from the graduate program can be requested through the Graduate School.

Students who experience a medical condition associated with their pregnancy and need accommodations recommended by their medical provider should contact the University's Title IX Coordinator, who will work with the student, cognizant faculty, and administration to determine what accommodations are reasonable and effective.

Application for Parental Leave, Department of Chemistry, University of Utah

For questions, please contact: Graduate Program Coordinator, 801 581-4393.

Applicant Name: Last _____, First

(please print)

Duration of Leave: _____ weeks (12 weeks maximum)

Anticipated Start Date of Leave: _____ DD/MM/YY

Eligibility

I hereby certify that I am a graduate student in the Chemistry Department at the University of Utah in good standing who is applying for parental leave for the period designated above.

The anticipated arrival of my child is: _____ DD/MM/YY

I am eligible for the requested benefits as:

a birth mother.

the primary caregiver for my or my partner’s newborn child or newly adopted child for which the requested leave will conclude within twelve months after the arrival of my child. By my signature below I attest that I will be providing the majority of child contact hours during my regular academic working hours for the period of 12 weeks during the leave.

In more detail, please describe the reasoning why the applicant instead of the other parent will serve as the primary caregiver (If you need more room please attach a separate page):

Applicant’s Signature: _____ , **Date:**

Applicant instructions: Submit signed original to both the Research Advisor and Graduate Program Coordinator.

Administrative use only

I hereby agree to the above stated parental leave:

Graduate Education Chair (print name)

Signature, Date

Department Chair (print name)

Signature, Date

,

3) COURSE REQUIREMENTS

Before admission to the Ph.D. or M.S. degree track, graduate students are required to complete a series of graduate courses. This first-year sequence is designed to give students a strong, fundamental background for advanced graduate work in their primary research area and to assist the faculty in evaluating new graduate students. The courses provide exposure to material in a student's area of interest while maintaining necessary breadth in other basic areas of chemistry.

Up to four courses (eight credit hours) may be waived on the basis of satisfactory prior completion of comparable courses elsewhere. Occasionally, credit may be established by examination. In either case, the student should discuss this option with the professor in charge of the course in question, who will then make a recommendation to the Graduate Education Committee.

Until the course requirement is met and a research advisor is selected, students must register for three courses per half-semester term. At least eight courses must be completed (including waived courses) the first academic year. Only the Graduate Education Committee has the authority to make exceptions to this rule. A course may be dropped or changed to Audit only by permission of the Graduate Education Committee.

Course Selection.

Upon beginning the program, each student selects a primary research area that he/she wishes to emphasize in coursework during the first year. One of the six areas of chemistry (analytical, biological, inorganic, materials, organic, or physical chemistry) may be chosen as the primary area of study.

Students in analytical, biological, inorganic, organic, or physical chemistry must complete eight half-semester courses in the first year with the following distribution:

- Four courses in your primary research area.
- Two breadth courses from other areas of chemistry.
- Two elective courses.

Materials students must complete eight half-semester courses in the first year following the instructions found in Table 1 (page 9).

The combination of the 8 required courses are referred to as the core course requirements.

Students may substitute courses from other science or engineering departments (*e.g.*, physics, computer science, biochemistry, materials science) for either the breadth or elective courses upon approval from his/her advisor and the Chair of the Graduate Education Committee. The student should petition in writing to take courses from other departments, explaining how the course will benefit his/her research program. The written petition and signed letter from the research advisor should be submitted to the Graduate Education Committee Program Coordinator. Only those students who have selected a research advisor may elect to take courses from outside of the Chemistry Department.

During the student's first semester in residence and until he/she has selected a research advisor, course selections must be approved, in writing (Form 1, Appendix B), by a member of the Graduate Education Committee prior to registration. Once a student has chosen a research advisor, the student makes course selections in consultation with his/her advisor. Financial support will not be provided for students who fail to have their course selection approved as described above.

4) First Year Progress Review:

The Graduate Education Committee will review the progress of each student every semester. After two semesters in the program (excluding summer semesters), the performance of the student in the core courses will be evaluated by the Graduate Education Committee, and a recommendation will be made to the full faculty. A student will ordinarily be recommended for Category I if the set of 8 core courses have been completed with grades of "B" or better. If the eight core courses have not yet been completed, with grades of "B" or better, a recommendation will be made to the full faculty that the student be placed in Category IIa, IIb, or III. The final decision as to how the student will be categorized rests with the full faculty.

Category I -- Accepted into the Ph.D. degree track.

Category II -- Accepted into the M.S. degree track.

- a. (Category IIa) Certain courses must be satisfactorily completed in order to be reconsidered for acceptance into Category I.
- b. (Category IIb) Accepted for the M.S. degree track only.

Category III -- Dismissed. Not acceptable as a candidate for a graduate degree in the Department of Chemistry.

Upon placing a student in Category IIa, the Chemistry Department faculty will normally recommend courses that must be completed satisfactorily or other action that must be taken in order to be reconsidered for acceptance into the Ph.D. degree track.

A student placed in Category IIb may petition to be reconsidered for the Ph.D. degree track after the completion of a thesis M.S. degree. The decision of the faculty as to whether an M.S. student shall be permitted to pursue a Ph.D. degree will then be based both upon the extent to which the student has demonstrated ability in research, and the degree to which the academic course requirements for the Ph.D. have been mastered. If the student wishes to be reconsidered for the Ph.D. track, the M.S. thesis defense will also be attended by two additional faculty members, who are chosen to supplement the three M.S. committee members in such a way that the proper composition for a Ph.D. committee is achieved. These additional members will participate in a private comprehensive examination after the public portion of the thesis defense. On the basis of the comprehensive exam, the committee will make a recommendation to the full faculty regarding the student's continuation toward the Ph.D. degree. If the faculty votes to place the student into Category I, this comprehensive exam will serve as the qualifying exam (preliminary oral exam). Successful defense of the M.S. thesis will not necessarily constitute passing the preliminary oral examination for the Ph.D. degree, since a higher level of performance is expected for the preliminary oral exam.

TABLE I. CORE CHEMISTRY COURSES in each primary research area. *Courses offered in the current year are found at <http://www.utah.edu/students/catalog.php>*

ANALYTICAL CHEMISTRY

CHEM 6740	Bioanalytical Chemistry	CHEM 7590	Advance Topics
CHEM 6810	Nanoscience	CHEM 7750	Information Processing
CHEM 7700	Transport and Chemical Analysis	CHEM 7760	Instrumentation Electronics
CHEM 7710	Advanced Analytical and Chemical Measurement	CHEM 7770	Analytical Spectroscopy and Optics
CHEM 7720	Separations	CHEM 7780	Surface Chemistry
CHEM 7730	Electrochemistry		

BIOLOGICAL CHEMISTRY

BLCHM 6410	Protein and Nucleic Acid Biochemistry	CHEM 7470	Nucleic Acid Chemistry
CHEM 7150	Bioinorganic Chemistry	CHEM 7480	Physical Principles of Biomolecular Systems
CHEM 7450	Biophysical Chemistry	CHEM 7490	Metabolism
CHEM 7460	Protein Chemistry		

INORGANIC CHEMISTRY

CHEM 7100	Principles of Inorganic Chemistry	CHEM 7150	Bioinorganic Chemistry
CHEM 7110	Inorganic Mechanisms	CHEM 7160	Organometallic Chemistry I
CHEM 7120	Physical Inorganic Chemistry	CHEM 7170	Homogeneous Catalysis
CHEM 7130	Solid State Chemistry		

ORGANIC CHEMISTRY

CHEM 7200	Contemporary Organic Synthesis I	CHEM 7270	Organic Spectroscopy I
CHEM 7210	Contemporary Organic Synthesis II	CHEM 7280	Organic Spectroscopy II
CHEM 7240	Physical Organic Chemistry I	CHEM 7290	Organic Chem. of Materials
CHEM 7250	Physical Organic Chemistry II		

PHYSICAL CHEMISTRY

CHEM 7000	Introduction to Quantum Mechanics I	CHEM 7070	Chemical Kinetics
CHEM 7010	Introduction to Quantum Mechanics II	CHEM 7080	Chemical Dynamics
CHEM 7020	Introduction to Spectroscopy I	CHEM 7500	Angular Momentum Theory
CHEM 7030	Introduction to Spectroscopy II	CHEM 7520	Computational Chemistry Laboratory
CHEM 7040	Statistical Thermodynamics		
CHEM 7050	Classical Thermodynamics	CHEM 7530	Molecular Simulations
CHEM 7060	Statistical Mechanics		

MATERIALS CHEMISTRY

Materials students are required to take at least two of the following Materials courses:

CHEM 6810	Nanoscience
CHEM 7130	Solid State Chemistry
CHEM 7290	Organic Chemistry of Materials
CHEM 7590	Materials for Energy Applications

Materials students are required to take at least four of the courses from the track of their choice:

Inorganic Materials

CHEM 7100	Principles of Inorganic Chemistry	CHEM 7200	Contemporary Organic Synth I
CHEM 7120	Physical Inorganic Chemistry	CHEM 7240	Physical Organic I
CHEM 7130	Solid State Chemistry	CHEM 7270	Organic Spectroscopy I

Organic, Biological and Hybrid Materials

CHEM 7240	Physical Organic I	CHEM 7430	Chem Biol Prot Nuc Acids
CHEM 7450	Biophysical Chemistry	CHEM 6740	Bioanalytical Chemistry
CHEM 7460	Protein Chemistry	PHCEU 7230	Nanomedicine
CHEM 7470	Nucleic Acid Chemistry	MSE 6480	Polymer Science

Physical Properties and Analytical Methods for Materials

CHEM 6740	Bioanalytical Chemistry	CHEM 7700	Transport & Chemical Analysis
CHEM 7000	Introduction to Quantum Mechanics I	CHEM 7730	Electrochemistry
CHEM 7010	Introduction to Quantum Mechanics II	CHEM 7720	Separations
CHEM 7040	Statistical Thermodynamics	CHEM 7750	Information Processing
CHEM 7050	Classical Thermodynamics	CHEM 7770	Analytical Spectr & Optics
CHEM 7520	Computational Chemistry Lab	CHEM 7780	Surface Chemistry
CHEM 7530	Molecular Simulations		

The remaining two courses are electives that can be chosen from the list of courses above under any primary research area.

Note1: The introductory course, CHEM 6510 (Advanced Biological Chemistry), is not acceptable as a core course for students interested in Biological Chemistry. It may be used as an elective or breadth course for students in other primary research areas, provided they have not previously taken a biochemistry course.

Note2: It is the experience of the Physical Chemistry faculty that in addition to the eight core courses, most physical chemistry students need to take two additional half-semester courses in physical chemistry to be well-prepared as physical chemists. Therefore, we strongly encourage students who identify themselves as physical chemists to take a total of 10 graduate courses in their first year, with the two additional courses selected from the physical offerings. If you have selected an advisor, you should seek his/her advice when selecting your courses; otherwise, your selection should be approved by the Physical Chemistry member of the Graduate Education Committee.

6) OTHER COURSEWORK

A. Safety and Ethics Courses:

All students are required to take a course in Laboratory Safety (CHEM 5510) and Research Ethics (CHEM 5570). These courses are mandatory for all students and cannot be waived. Prior to being admitted to Ph.D. candidacy, all graduate students must enroll in and successfully complete each of these courses.

- a. CHEM 5510, "Introduction to Laboratory Safety", (1 credit hour). This course in laboratory chemical safety is required for all entering chemistry graduate students. Topics to be covered include laboratory emergencies, chemical hazards, lab inspections and compliance, managing and working with chemicals, waste handling, case studies of university accidents, laboratory equipment, biosafety, radiation, and animals, and microfabrication and nanomaterials.
 - b. CHEM 5570, "The Ethical Pursuit of Scientific Research", (1 credit hour). This course will discuss contemporary topics in scientific ethics and is required of all graduate students. The class will lead to a better understanding of what responsible scholarship means for researchers in chemistry.
- B. First-year students are required to attend all faculty research presentations, given during the Fall semester and designed to aid in the selection of an advisor for dissertation research.
- C. Occasionally, students may need to learn the material that is taught in an undergraduate course (such as a Computational Science programming course). Students in this position are encouraged to ask the instructor of the appropriate course to take a directed reading class from them, at the 5000-level, for one credit hour and then sit in on and complete the assignments and exams for the undergraduate course. The student will then obtain a grade in the directed reading course, which qualifies for a tuition benefit. To make this a legitimate graduate course, the advisor (not the instructor of the course) should give the student a project that is to be completed during the semester. The advisor then reports the grade to the instructor of the directed reading course, who then submits the final grade.

7) SEMINARS AND COLLOQUIA

A. Seminars

The department offers seminar series in the areas of Analytical/Physical, Biological, Inorganic, Materials and Organic Chemistry. Speakers are students, faculty, and outside visitors. Students are expected to attend all seminars in their primary research area and are encouraged to attend others as well.

B. Colloquia

The Department also offers a Colloquium series by invited speakers on topics of general chemical interest. These provide an important view of what is currently going on in chemistry and an opportunity to hear distinguished speakers from all over the country and abroad. All students are expected to attend. These Colloquia are preceded by a brief social period in which refreshments are served.

8) SELECTION OF A RESEARCH ADVISOR

By the end of the first semester in the Chemistry Graduate Program, students are strongly advised to select a research advisor. The selection of a research advisor should be considered very seriously. To aid in the selection of a research advisor, students are required to attend all the faculty research presentations (section 6B) and conduct personal interviews with the faculty members whose research is of interest for the student. Recent faculty publications, as well as senior graduate students and post-doctoral associates can also provide useful information. Students should realize that the choice of a research advisor will greatly influence the next three to five years of their lives and, in all likelihood, the rest of their careers. This is an important decision that both the student and potential advisor must make with careful consideration. *In order to ensure that a thorough and thoughtful deliberation of potential research advisors is undertaken, a meaningful interview with at least four faculty members is required.* Even if the student has already decided on a research director, such interviews are an all-too-rare opportunity to learn about other research and to meet other faculty members one-on-one. Such contacts are especially useful when the student later chooses their supervisory committee (see section 9). ***If a student waits too long to interview and select a research advisor, it gives the impression of a lack of interest. Students who have not found a research advisor by the middle of their second semester in residence may be Subject to dismissal from the program.***

The following steps are required to formalize the selection of a research advisor:

(1) obtain the appropriate form (Form 2, Appendix B) from the Academic Program Coordinator in the Graduate Office; (2) secure the signatures of at least four faculty with whom you have spoken; (3) rank order your top three choices for an advisor; and (4) return the form to the Academic Program Coordinator for approval by the Director of Graduate Studies.

Students are **strongly encouraged** to complete the process of interviewing faculty and selecting a research advisor by Dec. 15th of the 1st year. Failure to select a research advisor by March 15th of the 1st year will result in the loss of good academic standing, the loss of financial support (including tuition waiver benefit), and potential dismissal from the program.

9) SUPERVISORY COMMITTEE

A student placed in Category I is required to assemble a Supervisory Committee in consultation with their research advisor. The Ph.D. Supervisory Committee consists of the research advisor, two faculty members from the student's primary research area, one faculty member from outside the student's primary research area, and one faculty member from outside the Department. For the purposes of assigning committees, faculty affiliations by research area are listed in Table 2 on the next page.

The student should fill out the Supervisory Committee selection form (Form 3, Appendix B), listing up to five faculty members in their primary research area and three faculty from outside the primary research area in order of preference. You must also provide a 1-2 sentence justification for each faculty member listed, explaining why they should be included on your supervisory committee. This form should be turned in to the GEC no later than September 1st at the beginning of the 2nd year. The GEC will make the final selection of committee members. Under unusual circumstances, an exception allowing more than one outside Department member on the committee may be made. Such a request must be approved by the research advisor and submitted in writing to the Program Coordinator of the GEC.

For the purpose of assigning faculty to supervisory committees, faculty members are considered as belonging to the following research areas listed in Table 2:

Table 2: Faculty Members listed by Research Area.

Analytical	Biological	Inorganic	Materials	Organic	Physical
Anderson	Bandarian	Burrows	Anderson	Bandarian	Anderson
Armentrout	Buck-Koehntop	Ernst	Conboy	Burrows	Armentrout
Conboy	Burrows	Kieber-Emmons	Grünwald	Heemstra	Conboy
Harris	Conboy	Louie	Harris	Looper	Grünwald
Minteer	Heemstra	Miller	Heemstra	Louie	Harris
Porter	Looper	Richmond	Miller	Miller	Miller
Shumaker-Parry	Minteer	Saouma	Minteer	Rainier	Molinero
White	Porter	Sigman	Molinero	Sigman	Morse
Zharov	Rainier	Stang	Noriega	Stang	Noriega
	Stang	Whittaker- Brooks	Saouma	Zharov	Porter
		Zharov	Shumaker-Parry		Shumaker-Parry
			White		Steele
			Whittaker- Brooks		Truong
			Zharov		

10) SEMINAR

Each student will present a 30-minute seminar by November 15th of the 2nd year. The seminar will be either on the subject of the student's research or on a topic in the chemical literature, according to the preference of the research advisor. Faculty and students in the department, including the student's supervising committee, attend the seminar. The student is responsible for scheduling the seminar with the seminar chairperson in the primary research area at least one semester in advance. The student should register for two credit hours of seminar in their designated primary research area during the semester in which they present. The student's performance at the seminar presentation will be evaluated and graded by faculty members attending the seminar. A grade of B or better is required to fulfill the seminar requirement for the Ph.D. degree.

11) QUALIFYING EXAMINATIONS FOR PH.D. CANDIDACY

A qualifying examination is required by the Graduate School of all students prior to admission to Ph.D. candidacy. This examination consists of two parts, a written examination and an oral examination.

A. Written Examination

The written examination requirement is satisfied by admission to Category I.

B. Oral Examination (Pre-Oral)

The Pre-Oral Qualifying Exam is devoted to an examination of the graduate student's progress in research, together with an examination of the student's general knowledge of chemistry, particularly in his/her primary research field.

i. Scheduling of the Pre-Oral Exam

The Preliminary Oral Examination (Pre-oral) requirement must be fulfilled by May 1st of the 2nd year for students entering in the Fall semester.

No later than March 1st of the 2nd year, the student will contact all members of the Supervisory Committee to schedule a specific date for the examination, and inform the Academic Program Coordinator in the Graduate Education Office. The student should also ask one of the chemistry faculty on the Supervisory Committee to serve as temporary chair for the Pre-Oral Exam, as the research advisor is not present during the Exam. The GEC Program Coordinator should be informed of the Pre-Oral chair's name one week before the Pre-Oral in order to prepare the appropriate forms, i.e. Program of Study and Pre-Oral evaluation forms (Form 6, Appendix B).

Students who fail to schedule and take this exam on time will no longer be considered to be in good standing by the Department. Specifically, they will be ineligible for financial support by the Department, including tuition waivers or any kind of full or part-time teaching appointment. Students may also be subject to dismissal from the program.

ii. Preparation for the Pre-Oral Exam

The student must prepare a written summary which should include the following:

- *Cover sheet: (1 page, not included in total page count)*
 - *Title:* (55 characters or less) Provide a concise descriptive title of your research.
 - *Name:* Your full name, the name of your Research Advisor, and the names of each member of your Advisory Committee
 - *Date, Time, and Place* of the Pre-Oral.
- *Introduction: (1-2 pages)*
 - Begin your document with an introduction to your research in which you discuss the main goal(s) of your research, making sure to place the work within the context of previous studies.
 - Include a discussion of the relevance of the research.
 - You should end the introduction with a brief summary of the expected outcome(s) of the research.
- *Background: (2-3 pages)*
 - Describe the relevant background information that is related to your research. This section must connect your research to previous work. When writing this section, assume that the reader is familiar with the field, but not an expert.
 - The *Background* section must include the following:
 - An introduction to the problem that you are investigating.
 - A description of the previous methods or approaches used to address this or related scientific problems.
 - The new approach, direction or innovative nature of your research which distinguishes it from previous work.

- *Research Summary: (3-4 pages)*
 - Describe your current research progress to date. **The inclusion of extensive experimental or theoretical data is not a requirement for the Pre-Oral, nor is the prior publication of a research article. Preliminary data, observations, and calculations are sufficient.**
 - The *Research Summary* must include the following:
 - A brief description of the procedures used for the collection, analysis, and interpretation of your data.
 - A discussion and interpretation of the results to date.
 - A discussion of your results within the context of previous studies.
- *Future Research: (1-2 page)*
 - Summarize your future research plans.
 - Include a summary of the expected results.
 - Address the significance of the expected results.
 - Discuss the expected time required to achieve your future goals.
- *References: (not included in total page count)*
 - References must include: complete author list, title, journal name, volume, inclusive page numbers, and year.
 - The format must be compatible with that used in a major journal in your research area (for example, ACS style (+ title), as used in the Journal of the American Chemical Society, or APS style (+ title), as used in the Journal of Chemical Physics).
- When writing the proposal you must strictly adhere to the following guidelines. The written document can be a maximum of 10 pages in length including figures but excluding references. All figures must be embedded in the document and of the appropriate size. For consistency's sake, your summary should be single-spaced and must be written in one of five fonts (Arial, Times New Roman, Helvetica, Palatino, or Georgia) using 11 point or larger type. The margins must be 1 " on all sides. **Written summaries that do not conform to the above specifications will not be accepted.**
- The Committee chair must approve any modifications in this format. This summary must be delivered to the GEC Program Coordinator in the Graduate Office and the members of the Supervisory Committee on or before April 15th of the 2nd year in the program (or at least two weeks prior to the scheduled date of the exam). **Failure to submit the written summary in a timely manner will result in immediate cancelation of the oral examination. A reduction in the two week timeline is allowed with written permission from the advisor and approval by all members of the Supervisory Committee.**

iii. *Format of the Pre-Oral Exam*

The student should prepare an oral presentation of the material described in the written summary. The talk should span approximately 30 minutes, and should encompass in a clear, concise, and logical fashion: (a) an introduction to the proposed research with necessary background, (b) a description of research progress to date, and (c) a proposed plan of future research. Research progress is broadly defined, and includes preliminary results, experiments attempted (successful or failed), instruments constructed, etc. The

student is expected to demonstrate an ability to discuss her/his research in a comprehensive and knowledgeable manner, with a sound understanding of the scientific methods and equipment that are used in carrying out this research. The oral exam should not exceed 2 hours in length.

iv. Evaluation of the Pre-Oral Exam

The Supervisory Committee's task is to determine whether the candidate (1) is making adequate progress on the chosen research problem, (2) is sufficiently acquainted with the relevant literature, (3) is capable of exercising critical scientific judgment, and (4) is likely to produce an acceptable Ph.D. dissertation.

The Committee, after offering whatever comments, suggestions, and criticisms are deemed appropriate, will take one of the following actions:

a) Pass

The student's progress and aptitude have been determined to be sufficient; the Committee recommends that this student be admitted to Ph.D. candidacy.

b) Conditional Pass

The student's progress and aptitude are largely satisfactory. However, the Committee has found that certain deficiencies must first be addressed prior to admission to Ph.D. candidacy. The Committee recommends that the student do further work. Such work may include (a) additional coursework to remedy a weak background, or (b) a rewrite of the manuscript portion of the Pre-Oral examination. The student is not required to retake the oral exam.

c) Not Pass

The student's progress and/or aptitude is/are fair but not satisfactory for admission to Ph.D. candidacy. The Committee recommends the student do further work and repeat the exam a final time. The procedures will be the same as the first meeting. The action taken at this second (and final) meeting will be to (i) pass the student with respect to his/her research progress and aptitude, or to (ii) fail the student, thereby terminating the student's eligibility for the doctoral program. This second exam must be completed prior to a date determined by the examination committee, and will ordinarily be within 9 months of the first.

d) Fail

The student has not demonstrated satisfactory research progress or research aptitude and cannot be recommended for admission to Ph.D. candidacy.

C. Overall Evaluation of the Qualifying Examination

The entire faculty will evaluate the results of the qualifying examination with respect to admission to Ph.D. candidacy. A grade of "Pass" on both exams normally results in a recommendation for admission to candidacy, but the opinion of a student's research advisor on his/her apparent ability to do Ph.D. research is also taken into consideration. Students earning "Fail" on either exam are not eligible for Ph.D. candidacy, and will be reclassified in Category IIb. In addition, students are not eligible for placement in Ph.D. candidacy until the Research Ethics course has been taken (credit/noncredit), the seminar has been successfully presented, and the Research Proposal has been successfully defended before the committee.

12) RESEARCH PROPOSAL

GUIDELINES FOR THE RESEARCH PROPOSAL

OVERVIEW

To be a successful Ph.D level chemist you must be able to formulate, communicate, and defend original research ideas. Thus, as part of your education we provide you with an opportunity to develop these skills by requiring that you generate and develop an original Research Proposal. Research ideas and the resulting proposals generally fall into one of two categories: “hypothesis-driven”¹ or “goal-oriented”.² It should be noted that many very successful proposals contain aspects of both categories.

The Research Proposal is a written document that describes an original research plan. While you are encouraged to discuss all aspects of the proposal with colleagues and professors, you are solely responsible for developing and defending the ideas contained within your proposal. The use of other people’s ideas without citation, regardless of whether they are published or not, is plagiarism and will result in disciplinary action up to and including dismissal from the program.³

When writing your Proposal, it is essential that you organize your ideas and express them clearly using correct spelling, terminology, grammar, straightforward sentence construction, and properly developed paragraphs. Writing guides are available from the American Chemical Society, ACS Style Guide: A Manual for Authors and Editors (2nd ed., Janet Dodd, Washington, DC: American Chemical Society, 1997). The writing guide by Strunk and White (now available on the web at <http://www.bartleby.com/141/>) is a good general reference. It is important to remember that even the most creative ideas will be discounted if a proposal is poorly written.

ABSTRACTS (due date December 15th of the 3rd year)

In preparation for your Research Proposal defense, students are required to submit two original research Proposal Abstracts to their Thesis Committee on or before December 15th of the 3rd year in the program. The Thesis Committee will evaluate the two proposals and notify the student as to which proposal to expand into a full written Research Proposal. If the Thesis Committee finds that the proposals are not satisfactory, the student will have time to resubmit revised proposal abstracts. You may be asked to submit two new Proposal Abstracts in the event that your committee finds your abstracts to be unacceptable.

Please note that for you to remain in good standing⁴ in the Ph.D. program your Proposal Abstracts must be submitted to your Thesis Committee and the Chemistry Graduate Coordinator by December 15th of your 3rd year. This deadline is independent of the date of your scheduled proposal defense.

1. Research that is directed by a hypothesis regarding the outcome or expected results from a scientific problem.

2. Research that is focused on attaining a particular goal. Included within this definition is the development or application of new methods or techniques to address a scientific problem.

3. For the University of Utah student code of conduct see: <http://www.regulations.utah.edu/academics/6-400.html>

4. Falling out of “good standing” will make you ineligible for financial support from the Chemistry Department. This will include losing your tuition benefit or being ineligible for any kind of full or part-time teaching appointment. It may also result in dismissal from the program.

Research Proposal Abstract Format (1 page each):

- *Title:* (55 characters or less) Provide a concise descriptive title for your proposal.
- *Full Name*
- *Specific Aims or Goals:*
 - Begin your abstract with a very brief introduction to the research topic. This is expected to include a description of the problem that you are trying to solve or the hypothesis that you are interested in testing along with a summary of the methods that you are going to use to solve the problem.
 - *Specific Aims:* (1 sentence each) Specific Aims are your research goals. It is best if you limit your proposal to 2-3 specific aims. Each specific aim should be stated in a single sentence and should be designed to directly test your hypothesis or to achieve your overall goal.
 - End this page with a summary of both the expected outcome and the significance of the proposed studies. *This section must include a brief description of what is significant and innovative about your proposed research (you should note that successful proposals do not necessarily need to have a high degree of innovation but should be of high significance).*
- *Key references*

THE PROPOSAL (due by February 15th of the 3rd year)

Note that for you to remain in good standing⁴ in the Ph.D. program your proposal is due to your Thesis Committee and the Chemistry Graduate Coordinator no later than February 15th of your third year. This deadline is independent of the date of your scheduled proposal defense. If you plan on defending your proposal earlier than the dates specified above, you must submit your proposal to your Thesis Committee and the Chemistry Graduate Coordinator at least two weeks prior to the scheduled defense date.

Guidelines

When writing the proposal you must strictly adhere to the following guidelines. The written document can be a maximum of 10 pages in length including figures but excluding references and Cover Page (vide infra). All figures must be embedded in the document and of the appropriate size. For consistency's sake, all proposals should be single-spaced and must be written in one of five fonts (Arial, Times New Roman, Helvetica, Palatino, or Georgia) using 11 point or larger type. The margins must be 1" on all sides. **Proposals that do not conform to the above specifications will not be accepted.**

PROPOSAL OUTLINE:

- *Cover sheet: (1 page, not included in total page count)*
 - *Title:* (55 characters or less) Provide a concise descriptive title for your proposal.
 - *Name:* Your full name, the name of your Research Advisor, and the names of each member of your Advisory Committee
 - *Date, Time, and Place* of the proposal defense (if established).

4. Falling out of "good standing" will make you ineligible for financial support from the Chemistry Department. This will include losing your tuition waiver or being ineligible for any kind of full or part-time teaching appointment. It may also result in dismissal from the program.

- *Specific Aims or Goals: (1 page)*
 - Begin your document with a very brief introduction to the research topic. This is expected to include a description of the problem that you are trying to solve or the hypothesis that you are interested in testing along with a summary of the methods that you are going to use to solve the problem.
 - *Specific Aims: (1 sentence each)* Specific Aims are your research goals. It is best if you limit your proposal to 2-3 specific aims. Each specific aim should be stated in a single sentence and should be designed to directly test your hypothesis or to achieve your overall goal.
 - End this page with a summary of both the expected outcome and the significance of the proposed studies. *This section must include a brief description of what is significant and innovative about your proposed research (you should note that successful proposals do not necessarily need to have a high degree of innovation but should be of high significance).*
- *Background: (ca. 3 pages)*
 - Describe the relevant background information that is related to your hypothesis or goal. This section must connect your proposed research to previous work. When writing this section, assume that the reader is familiar with the field, but not an expert.
 - The *Background* section must include the following:
 - An introduction to the problem that you plan to investigate.
 - A description of the previous methods or approaches used to address this or related scientific problems.
 - Precedent for speculative or risky experiments.
- *Research Plan: (ca. 4 pages)*
 - Describe the design of your research program by giving a brief plan that lists the procedures and steps that you will use to accomplish each Specific Aim of the project.
 - The *Research Plan* must include the following:
 - A description of all procedures that will be used for the collection, analysis, and interpretation of data.
 - A description of the procedures and methods that you will use and/or develop to accomplish your goals and their advantages. To do this you will need to compare your procedures and methods to those previously used, discussing the similarities and differences.
 - A time-line for the proposed experiments. You should be practical in terms of how much work you propose. The goals of the proposal must be achievable by you (either as a postdoc or graduate student) within a 2-3 year timeframe.
 - A description of any hazardous procedures or materials and the precautions that will be exercised.
- *Potential Problems and Their Solutions: (ca. 1 page)*
 - List anticipated difficulties and limitations of the procedures and/or methods you propose. In cases where the difficulties are likely to be a hindrance to achieving your goals, alternative approaches must be given.

- *Summary and Conclusions: (ca. 1 page)*
 - Summarize your research plan.
 - Include a summary of the expected results.
 - Address the significance of the expected results.
- *References (not included in total page count):*
 - References must include: complete author list, title, journal name, volume, inclusive page numbers, and year.
 - The format must be compatible with that used in a major journal in your research area (for example, ACS style (+ title), as used in the Journal of the American Chemical Society, or APS style (+ title), as used in the Journal of Chemical Physics).

Formulating and Testing a Hypothesis and Achieving a Goal:

Your hypothesis or goal should advance the current understanding of the state of the art in your chosen area and it must provide important information about the problem in which you are interested. You must demonstrate a sound framework for fulfilling these requirements by providing informed and logical arguments in the *Background* section of the proposal.

Hypothesis-Driven Proposal:

For proposals that are “hypothesis-driven”,¹ you should formulate a hypothesis that you believe is the most likely answer to the question. In order to identify the most likely answer you must identify and weigh a number of possible answers to your question. Evaluation of the relative quality of the answers requires sophisticated interpretation of previous work, evaluation of the relative weights of current conflicting observations, extension by analogy to other systems, and a good deal of intuition. The synthesis of these components into a logical argument must also be convincingly and concisely presented in the *Background* section.

Undoubtedly, in formulating your hypothesis you will need to make certain assumptions about your problem. It is essential that you recognize these assumptions. A valuable exercise is to rank your assumptions based on how critical they are to your hypothesis and to list, in two columns, arguments that support and contest your interpretation. Spend time acquiring information about the most important assumptions and always be extremely critical. Quite frequently, entire scientific disciplines encounter roadblocks due to collective acceptance of improper assumptions. For example, until the 1950's proteins were thought to be the carrier of genetic information, not DNA. The entire field of genetics had assumed that DNA, a simple polymer of only four central building blocks, could never encode the genetic diversity necessary to produce complex organisms. Recognition of DNA as the transmitter of genetic information was hailed as a scientific breakthrough and is central to the entire field of genetics and molecular biology. Major advances (“scientific breakthroughs”) often occur when someone successfully challenges a universally believed assumption that turns out to be invalid.

Goal-Oriented Proposal:

Examples of goal-oriented proposals include, but are not limited to, the synthesis of a molecule of some biological relevance, the design of a new material, the development of an analytical method, and the development of a new catalyst system. As with hypothesis-driven proposals, goal-oriented proposals must be focused on solving a problem or problems.² It is imperative that you avoid the pitfall of identifying a method or a goal without having a particular problem to solve. Equally important is that your approach or method has at least one advantage

over other approaches or methods to the same problem. To ensure that you meet this requirement you will need to identify and evaluate as many possible solutions to your problem as possible and then to critically compare your approach with all of the others. So that the reader of your proposal can follow your line of thought, you must present a convincing argument for your particular approach in the *Background* section of the proposal.

Specific Aims

Successfully defending your research plan requires a solid set of goals. As stated above, these goals are your specific aims. While it is possible to formulate many aims to test a hypothesis, to answer a question, or to develop a method the most successful proposals are generally focused on the very “best” aims. The “best” aims target the most important aspect of the problem in which you are interested. Keep in mind that the reader of your proposal may have a different opinion as to the “best” aims to pursue. It is your job to convince the reader that your approach is, at the very least, reasonable.

Specific aims should be presented in order of decreasing importance. Earlier aims should be more extensively developed than later aims in the *Research Plan* section. By extensively describing early aims, the reader develops trust in your abilities and requires less information to believe your arguments and abilities in the later aims. Likewise, if the early aims are poorly described or developed, the reader will have less patience to read about subsequent aims.

EDITING AND PROOFREADING

A superior proposal is a tightly edited document. Very few individuals can write a suitable proposal without going through numerous revisions to sharpen the organization, remove redundant words or phrases, clear up ambiguities, and correct misspelled words and grammatical errors. Do not assume that you belong to that privileged group! Good editing is a time-consuming and difficult job. You are advised to seek outside help from your peers at all stages (early and late) of the writing and editing process.

COMMON MISTAKES

You can avoid having to revise, retake, or fail your oral defense if you avoid the following common mistakes:

- No Significance or Goals that are Too Narrow: “This work will be of little or no real interest or significance.”
- Too Broad or Unrealistic Goals: “I will cure cancer.”
- Fishing Expedition: “I will perform lots of experiments and see what they produce.”
- Technique in Search of a Problem: “I have a great experimental method but I don’t know what to do with it.”

TALK TO YOUR COMMITTEE

Communicate with your Thesis Committee in advance of your proposal defense if there is concern about the scientific approach, style, or expected level of oral presentation and written detail.

PROPOSAL DEFENSE

You will defend your proposal in front of your Thesis Committee. It is imperative that you be the expert in the room on the topic of your proposal! You should prepare a short (20-25 minute) overview that focuses on the most significant parts of your proposal. Limit the introduction and background slides and focus your presentation on your hypothesis, your method(s), and your plan. Keep in mind that the time limit for the examination is 1 hour and that your Committee may repeatedly interrupt you. To receive a passing grade for the defense of your proposal you are expected to be able to either immediately answer or to be able to logically work through the majority of your Committee's questions.

13) Ph.D. FINAL ORAL EXAMINATION

This examination will cover the thesis research of the candidate. The first part of the exam is open to the public and is normally a seminar presentation of about 50 minutes in length, after which the student's Ph.D. Supervisory Committee will carry out further questioning. A pass/fail vote by the Committee will follow. The examination version of the thesis must be in the hands of the Ph.D. Supervisory Committee at least 14 days before the examination.

14) TIMELY COMPLETION OF THE Ph.D. DEGREE

It is expected that each student should be able to complete all of the requirements for the Ph.D. degree in four to five years. In order to encourage the timely completion of the degree, students who have not defended their dissertations within 4.5 years are required to meet with their Ph.D. Supervisory Committees at least once each year. The first of these meetings must take place no later than the beginning of the 5th year in residence. This meeting may be brief and informal. The purpose will be to bring the Committee up to date on the research progress made and to formulate a timetable for completing the remaining goals, including an estimated date for the thesis defense. This plan must be approved by the Committee and then forwarded to the Academic Program Coordinator in the Graduate Office for inclusion in the student's permanent file.

15) MASTER OF SCIENCE DEGREE

The student should consult the University of Utah Graduate School website (<http://gradschool.utah.edu/current-students/graduation-overview-for-masters-candidates/>) for details. For either the coursework or thesis M.S. degrees, Category I or II placement on the basis of course performance is required. An M.S. Supervisory Committee composed of three Chemistry faculty is then chosen. The Graduate Education Committee must approve the committee.

A minimum of 30 semester credit hours is required for the M.S. Degree (thesis and coursework) in Chemistry. At least 12 hours of these will be required graduate chemistry courses, satisfactory completion of which will fulfill the Graduate School Comprehensive Examination requirement.

A. Coursework Master's Degree

For the coursework M.S. Degree, at least 10 hours of research credits (CHEM 6900) and 20 credit hours of coursework in graduate level chemistry courses or graduate courses in a closely allied field of study (subject to approval by the student's supervisory committee) are required.

The final examination for the coursework M.S. is a written exam in the student's area of emphasis that will be administered by the faculty. Alternatively, and upon mutual agreement between the student and faculty advisor, students may elect to write a report on his/her research, and present the report to his/her committee for approval.

B. Thesis Master's Degree

For a thesis M.S. Degree, at least 10 hours of research credits (CHEM 6970) and 20 credit hours of coursework in graduate level chemistry courses or graduate courses in a closely allied field of study, subject to approval by the student's supervisory committee, are required.

In order to obtain a Thesis Master's Degree, students must write a master's thesis and then successfully defend the contents of the thesis in an oral examination proctored by the students Supervisory Committee. The written thesis must be submitted to the members of the Supervisory Committee at least 14 days before the oral examination. The final oral examination covers the thesis research of the candidate. The first part of the exam is open to the public and is normally a brief presentation of the thesis research after which the student's Supervisory Committee will carry out further questioning. A pass/fail vote by the Committee will follow.

ADDITIONAL DEPARTMENTAL & UNIVERSITY REQUIREMENTS

16) BECOMING A LEGAL RESIDENT OF UTAH

In order to continue to qualify for the tuition benefit program, all domestic and non-resident alien graduate students who are not Utah residents are required to submit evidence to the Graduate School that they have made a good faith effort to apply for and obtain Utah residency after their second year (40 credit hours) of graduate study. However, if residency is denied, their tuition benefit status will not be affected. International students are not affected by this requirement because they cannot qualify for resident status.

A residency application will be sent to all domestic and non-resident alien students at the end of the second year in residence by the Academic Program Coordinator in the Graduate Office. There are no non-resident fees required of those who attend the University during summer semester. In addition, students registered for only CHEM 7970 (Thesis Research) are charged at the in-state tuition rate. Students are encouraged to review the residency requirements found in Appendix A of this handbook.

17) OUTSIDE EMPLOYMENT POLICY FOR GRADUATE STUDENTS

It is the policy of the faculty of the Department of Chemistry to encourage graduate students to devote their full attention to the completion of the Ph.D. (or M.S.) in chemistry. By accepting a TA/RA stipend or fellowship, a student agrees not to work at a second job, either within or outside of the Department, without prior consent from his/her advisor and the Chair of the Graduate Education Committee. Students who pursue additional employment without notifying their advisor and the Chair of the Graduate Education Committee are not considered to be in good standing, which may result in immediate discontinuation of their TA/RA stipend or fellowship.

18) GUARANTEE OF FINANCIAL SUPPORT FOR STUDENTS IN GOOD ACADEMIC STANDING

Under current Department of Chemistry guidelines, any graduate student admitted under regular status who is in good academic standing is guaranteed financial support for two years (4 semesters of tuition benefit) as an M.S. candidate (thesis M.S. only), and for 5 years (10 semesters of tuition benefit) as a Ph.D. candidate (see section 1). This policy was implemented to support students who were making normal progress towards a degree, and to assure that the Department of Chemistry will support students even if (for example) their advisor's research support is unexpectedly cut off. Please be aware that the only departmental source of financial support to graduate students is in the form of Teaching Assistant positions. Thus, the guarantee of financial support presupposes that a student can function satisfactorily as a Teaching Assistant, and has had an acceptable level of achievement as a T.A. A student is ineligible for a T.A. and guarantee of financial support if that student is not qualified to teach. Reasons for ineligibility include but are not limited to: poor evaluations from students or faculty supervisor, failure to obey safety regulations, or inability to communicate effectively in English.

19) TERMINATION OF A GRADUATE STUDENT/FACULTY ADVISOR RESEARCH RELATIONSHIP

The following guidelines have been jointly approved by the Faculty and the Graduate Student Advisory Committee of the Department of Chemistry for the rare occasions when it becomes necessary to terminate a graduate student/faculty advisor research relationship.

Either the graduate student or the faculty advisor may terminate a student/advisor research relationship because of dissatisfaction. It is important that both parties respect the needs of the other. The following guidelines are designed to help accomplish this.

If a faculty advisor is dissatisfied with the research effort of a student, the advisor should make every effort at an early stage of the dissatisfaction to communicate in writing to the student the concerns he/she may have about the deficiencies in their research performance. If the deficiencies persist, the faculty advisor may place the student on probation by identify to the student in writing the unsatisfactory aspects of the student's research performance and the measures needed to bring their research activities to an acceptable level. Students are allowed a reasonable time (at least 30 calendar days) to correct the deficiencies during the probationary period. A copy of the letter outlining the deficiencies in their research should also be sent to the chair of the Graduate Education Committee and the Graduate Program Coordinator. If the deficiencies are corrected in the probationary period, the faculty advisor should notify the student in writing that he/she is no longer on probation. A copy of the letter is also to be sent to the chair of the Graduate Education Committee and the Graduate Program Coordinator.

If the deficiencies persist at the end of the formal probationary period, it is the prerogative of the research advisor to terminate the student/advisor research relationship. The procedure should be:

- a. To notify the student in writing, giving reasons for the dismissal, indicating a formal termination date at least 15 days after the date of the letter. A copy of the letter should be sent to the chair of the Graduate Education Committee and the Graduate Program Coordinator.
- b. If the student is being paid as an R.A., the student should be kept on the payroll for 15 days after the date of the notification letter to allow time to establish a new research director relationship, unless a new research director puts the student on a payroll before the end of the 15 days.
- c. If the student is being paid as a T.A., the department will continue the current T.A. support until the end of the termination semester, contingent, of course, on the T.A. duties being carried out as required.

It is the student's obligation to turn over all data and notebooks arranged in a manner that will allow the research director to continue the work. If these materials are not turned over by the termination date, any pay from a new research advisor or the department may be held in escrow until the above obligation is met.

A student who wants to leave a research group should give the faculty advisor 30 days written notice outlining the reasons for leaving the group. During the 30 days, any research should be brought to a point where it could be easily passed on to a new person. All notebooks and data should be returned to the research advisor before the student is put on another faculty member's payroll or the student leaves the program. Students should be aware that it is impossible to make

T.A. appointments in mid-semester and should plan accordingly.

A student who changes research groups is obligated to complete a change of advisor form available from the Academic Program Coordinator in the Graduate Office. At this time, the student should also reconstitute the student's supervisory committee if necessary, e.g. if they have switched primary research areas. If the student has already completed the pre-oral examination, the student must prepare a brief (2-5 page) summary outlining the new thesis project within five months of joining the new research group. Based on this preliminary information, the committee may decide to call for a brief oral presentation of the new project by the student. An oral presentation would be considered normal for a student that switches primary research areas or makes a substantial change in their research direction. Failure to obtain written approval from the supervisory committee within six months of switching advisors will result in loss of good standing for the student and may result in dismissal from the program.

20) DISMISSAL

In the unusual case that a student fails to make satisfactory progress toward the timely completion of a graduate degree, the faculty may consider dismissal of the student from the program. Students should be given timely and regular written feedback regarding the academic deficiencies that lead to a decision for dismissal. The student's rights and responsibilities in the case of dismissal are set forth in Policy 6-400, Section IV of the Regulations Library.

21) CHECK-OUT PROCEDURES

Upon completion of study here and before leaving the University of Utah campus, the student is responsible for turning in all keys issued in their name. As stated on the key request (signed at the time the keys were issued): "I will return this key when my need or employment terminates." The keys must be returned to the Main Office (2020 HEB), not to the research advisor. The student should also obtain an "Exit Interview" form from the Graduate Program Coordinator in the Graduate Office to provide information such as forwarding address and future affiliation.

22) UNIVERSITY OF UTAH HONOR CODE

Academic dishonesty in all its forms is proscribed including, but without being limited to, cheating on tests, plagiarism, and collusion.

1. Cheating on tests includes but is not limited to:
 - a. copying from another student's test paper;
 - b. using materials during a test not authorized by the person giving the test;
 - c. collaborating with any other person during a test without authority;
 - d. knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or in part the contents of an unadministered test;
 - e. bribing any other person to obtain an unadministered test or information about an unadministered test;
 - f. substituting for another student or permitting any other person to substitute for oneself, to take a test;
 - g. altering a returned examination for subsequent re-evaluation and regrading;
 - h. failure to return an examination that the instructor has required to be returned;
 - i. removal of an examination from the classroom or office that the instructor has required not to be removed.

2. "Plagiarism" means the appropriation of any other person's work and the unacknowledged incorporation of that work in one's own work offered for credit. "Plagiarism" also includes the republication of your own work without citing the location where your work was originally published.

3. "Collusion" means the unauthorized collaboration with any other person in preparing work offered for credit.

National Academy of Sciences Definition of Misconduct in Science

Misconduct in science is defined as fabrication, falsification, or plagiarism, in proposing, performing, or reporting research. Misconduct in science does not include errors in the recording, selection, or analysis of data; differences in opinions involving the interpretation of data; or misconduct unrelated to the research process.

Academic dishonesty and/or misconduct will not be tolerated. Students that are found to be academically dishonest or to have carried out scientific misconduct will be subject to disciplinary action up to and including dismissal from the program. Actions for academic misconduct shall follow the process set forth in Policy 6-400, Section V of the regulations Library.

Graduate Tuition Benefit Program Guidelines

1. Categories of Supported Graduate Students
2. Registration Requirements
3. Financial Support Requirements
4. Service Requirements
5. Residency and Meritorious Status
6. Restrictions
7. Administration

Categories of Supported Graduate Students

The four eligible classifications qualifying a student for TBP participation are:

- Graduate Teaching Assistant (TA), (PAN job code 9416, Exempt): A graduate student with instructional responsibilities as instructor of record, assistant to the instructor of record or tutor. Duties may include lecturing, holding discussion or problem sessions, conducting laboratory sections, conducting studio or performance work, online instruction, grading, tutoring, and holding office hours. International students must be cleared through the International Teaching Assistant Program before being placed in jobs coded 9416.
- Graduate Research Assistant (RA), (PAN job code 9314, Exempt): A graduate student assigned directly to an externally funded research grant (5000 fund only) and doing research for that project.
- Graduate Assistant (GA), (PAN job code 9330, Exempt): A graduate student assigned work related to his/her degree program and not covered in the previous two categories. A GA must be funded by his/her department and not supported by external 5000 funding. If a student wishes to work as a GA outside his/her home department, prior approval must be granted by the dean of The Graduate School.
- Graduate Fellow (GF): A graduate student on a fellowship receiving a monthly stipend and whose tuition is not paid by the award. No employer-employee relationship exists in a fellowship. The University administers the award and a service expectation may or may not accompany it. The five-digit account 66900 must be entered in the chart field on the stipend form. TBP has right of first reversal if other sources of tuition funding are available.

These four specific job codes satisfy current federal policies and regulations for graduate students working toward post baccalaureate degrees at the University of Utah. Graduate students should be classified as exempt whenever feasible and not hourly. Students on stipends should receive prorated monthly payments. Non-matriculated students, part-time students, and students on probationary status are ineligible for the TBP.

PeopleSoft fund codes 1000, 2000, 5000 and 6000 satisfy TBP payroll eligibility. Note: Graduate RAs (9314) must be paid from research grants with a 5000 fund and eight digit project number. To be eligible for TBP participation, no job code other than 9314 (RA) can be used on a PAN with a 5000 fund.

Registration Requirements

Students participating in the TBP must be full-time, matriculated graduate students in good standing, cumulative GPA 3.0 (Law School, 2.0). Students on academic probation are not eligible for a Graduate School tuition benefit. TBP full-time student status means registration for at least

nine credit hours throughout the semester. This provision does not affect full-time definitions or requirements currently employed for the purpose of loan repayment, student insurance, or other reporting requirements. TBP covers nine graduate credit hours to a maximum of 12 credit hours, except for RAs whose tuition benefit is a minimum of nine and a maximum of 11 credit hours in Fall and Spring semesters and three credit hours in Summer semester. For RAs who have exceeded 84 accumulated credit hours, resident (in-state) tuition only is included in the TBP. This condition will be implemented in the semester when cumulative registration exceeds 84 credit hours as a University of Utah graduate student. Undergraduate, contract, and/or audited courses count toward the required minimum nine credit hours but do not qualify for a tuition benefit. A student registered for fewer than nine credit hours may make up the difference by registering for 6970, 6980, 7970, 7980, or other appropriate graduate credit. Students may register for a maximum 16 semester hours but are responsible for tuition for hours exceeding 12 credits. Students adding and/or dropping courses after the semester's published add/drop deadlines are responsible for any and all charges incurred, including withdrawals. If registration falls below nine credit hours at any time during the semester, a student becomes ineligible for TBP participation and will be billed the full tuition for that semester.

Financial Support Requirements for a Tuition Benefit

All students receiving a tuition benefit must meet minimum financial support requirements paid through the University of Utah for each semester in which a benefit is received.

2015-2016 Academic Year Minimum Support Levels

1. \$7,000 per semester: 100% tuition benefit
2. \$5,250 per semester: 75% tuition benefit
3. \$3,500 per semester: 50% tuition benefit

2016-2017 Academic Year Minimum Support Levels

1. \$7,250 per semester: 100% tuition benefit
2. \$5,438 per semester: 75% tuition benefit
3. \$3,625 per semester: 50% tuition benefit

No tuition benefit is granted to students receiving less than \$3,375 for the semester. Required minimum support level is annually indexed to general salary increases to prevent gradual erosion of established graduate student salaries and stipends.

Service Requirements

Graduate students receiving a tuition benefit are expected to fulfill the responsibilities appropriate to their specific assignments. No student is required to work more than 20 hours a week (0.50 FTE) in order to receive a tuition benefit. Faculty may expect up to 20 hours of work a week (0.50 FTE) from students receiving a 100% tuition benefit, 15 hours a week (0.375 FTE) from students receiving a 75% tuition benefit, and 10 hours a week (0.25 FTE) from students receiving a 50% tuition benefit. Students working one or more on-campus jobs with a combined FTE greater than a 0.74 FTE are ineligible to participate in the Graduate Tuition Benefit Program.

NOTE: In order to participate in the TBP, student information, including combined salaries, stipends, and FTEs (from university departments) using job codes (9330, 9314, and 9416), must be entered on the TBP Web page by the "home" department (department in which the student is

pursuing a graduate degree). These data must be entered on the Web before the 'state registration census' is taken, e.g., 15th day of classes.

Residency and Meritorious Status

As approved by the University of Utah president and according to Utah law and the Board of Regents' policy, out-of-state TBP students are exempt from paying nonresident tuition. Their graduate tuition benefit is at the in-state rate for the appropriate TBP level (100%, 75%, or 50%). Tuition and fees not covered by the TBP are the student's responsibility. Out-of-state, non-international graduate students receiving a tuition benefit must apply for Utah residency upon fulfilling 40 semester credit hours at a regionally accredited Utah institution of higher education. Comprehensive and aggressive action should be taken by departments to ensure that U.S. citizens apply for Utah residency once 40 graduate credit hours are reached. A student's ability to establish residency will not affect receipt of a tuition benefit. (Go to www.admissions.utah.edu for details on how to apply and qualify for residency reclassification).

Graduate meritorious status is established by:

- Admission to the University of Utah as a matriculated graduate student;
- Selection on the basis of merit, determined by written policy in each department, as a supported graduate student receiving a salary or stipend from the University of Utah under the provisions and subject to the minimum levels of support provided in the Graduate Council guidelines;
- Recommendation of the department chair;
- A candidate for a graduate degree maintenance of a 3.0 GPA or higher (except where otherwise approved, such as a 2.0 GPA in the Law School). GPAs are verified at the end of each academic year. A grade below C- is not accepted for credit toward a graduate degree; some departments further restrict C grades.

Restrictions

A graduate tuition benefit is available only to graduate students compensated through the University of Utah. The TBP covers general graduate tuition and mandatory fees. Differential tuition charged by various university graduate and professional programs is the responsibility of the graduate student, department, and/or college. Students may participate in the TBP for a limited number of semesters, which need not be sequential. Time limits for participation in the TBP are as follows:

1. Students in a master's program are limited to two years (four semesters) of tuition benefit support.
2. Students in a doctoral program who entered with a bachelor's degree are limited to five years (10 semesters) of tuition benefit support.
3. Students in a doctoral program who also received a master's degree at the University of Utah are limited to five years of tuition benefit support (two years for a master's + three additional years for a doctorate).
4. Students entering a doctoral program with a master's degree from another university are eligible for four years (eight semesters) of tuition benefit support.

Doctoral students who fall under categories 2 and 3 above and who have served a minimum of four semesters as full-time TAs (0.50 FTE or 20 hrs/ week) may receive an additional year (two semesters) of tuition benefit support beyond the limits described above. In order for the student

to receive this time extension, departments must send a written request to The Graduate School that includes the student's name and uNID. These restrictions do not limit the number of years or semesters a program, department, or college may choose to support a student in addition to the TBP. Established time limits for completion of graduate programs still apply.

The student and department are responsible for maintaining an accurate count of the semesters of tuition benefit support a student has received. A student who receives more terms of tuition benefit than he or she is eligible for may be retroactively billed for the tuition of the ineligible semester(s).

Tuition benefit support is not generally available for summer semester.

Administration of the Tuition Benefit Program

The Graduate School administers the Graduate Tuition Benefit Program. Verification of a student's TBP eligibility is the department's responsibility. Note: If a graduate student received a conditional tuition credit for the semester but (a) withdrew from courses, dropping below the minimum nine credit hours; (b) received less than the minimal financial support; (c) failed to provide evidence of acceptable SPEAK test scores (as applicable); or (d) in any way did not meet all requirements or restrictions associated with any of the TBP graduate student components or Graduate School policy, the tuition credit will be rescinded. The student will be billed for tuition and fees at the full, relevant rate for that semester.

Students are not eligible to receive a tuition benefit after a semester has ended if they were not entered on the Web prior to the date the 'state's registration census' (15th day of classes) is taken. It is a department's responsibility to enter eligible students on the TBP Web page in a timely manner prior to the 15th day of the semester the student expects to receive the benefit. No retroactive benefits are awarded. With a petition from the student's department chair to the dean of The Graduate School, exceptions will be considered for personal emergencies such as illness or family emergency.

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201 Presidents Circle Room 302 SLC UT 84112
(801) 581-7642

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Appendix B. Student Forms.

Copies of forms may be obtained in the GEC office (4404 TBBC) or “on-line” at www.utah.edu/graduate_school/forms.html.

Form 1 Course Approval Form.....	33
<i>Form must be filled out and signed by the faculty advisor in the primary research area of interest at the beginning of the Fall and Spring semester of the 1st year.</i>	
Form 2 Selection of Faculty Research Advisor.....	34
<i>Form will NOT be approved without a minimum of four signatures.</i>	
Form 3 Supervisory Committee Proposal Form	35
Form 4 Report on Preliminary Oral Exam.....	36
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COURSE APPROVAL FORM

Student Name: _____

Semester & Year _____

Note: A minimum of 9 credit hours in GRADUATE courses must be taken in order to receive a tuition benefit (maximum of 12 credit hours). Students who have not yet chosen a research advisor are required to take 12 credit hours of courses per semester.

FALL A	FALL B

Advisor Signature: _____ Date: _____

Please return to the Graduate Education Office, 4404 TBBC

SELECTION OF FACULTY RESEARCH ADVISOR
(Submit to the Graduate Education Office, 4404 TBBC)

Student Name: _____

I. Signature of faculty members interviewed (*minimum* of four)

(1) _____ (date)

(2) _____ (date)

(3) _____ (date)

(4) _____ (date)

(5) _____ (date)

(6) _____ (date)

II. List your top three choices for your research advisor.

1st choice _____

2nd choice _____

3rd choice _____

- III. This student has attended a Departmental Safety Seminar.
 This student has not attended a Departmental Safety Seminar, and the research advisor must assume responsibility for his/her lack of training.

IV. Approval by the Director of Graduate Studies

(Signature of Director)

(date)

V. Acceptance

I agree to serve as the research advisor for the above student and am able to provide a research stipend to the student under the condition that he/she remains in good standing within the Department and makes satisfactory progress towards the MS or PhD degree.

(Signature of Advisor)

(date)

VI. Approval by the Department Chair

(Signature of Chair)

(date)

Supervisory Committee Proposal Form

Please fill in the names of the faculty, in order of preference, which you propose for your supervisory committee. After the form has been completed, have your advisor sign indicating that the proposed members are appropriate for your research. Return the form to the Graduate Education Office (4404 TBBC) no later than September 1 of the 2nd year. The Graduate Education Committee will inform you of the final selection of committee members by September 30th.

Name: _____

Primary Research Area: _____

Short Title of Proposed Research: _____

Advisor: _____

Proposed Committee Members:

Primary Research Area (in order of preference)

GEC Selection

- | | |
|----------|-------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| 3. _____ | _____ |
| 4. _____ | _____ |
| 5. _____ | _____ |

Out of Area (in order of preference)

- | | |
|----------|-------|
| 1. _____ | _____ |
| 2. _____ | _____ |
| 3. _____ | _____ |

Out of Department [NOTE: The student must meet with the out-of-department member and obtain his/her agreement to serve]

1. _____ Dept. Name: _____

Signature of out-of-department member: _____

Proposed Committee Members Justification:

Please provide a short 1-2 sentence justification for each of the faculty members listed above explaining why they should be placed on your Supervisory Committee. (Attach your justifications to your selection form)

Approval of Research Advisor (signature required):

Print Name

Signature

Date

THIS FORM IS DUE BY THE SECOND YEAR OF THE GRADUATE PROGRAM
REPORT ON THE PRELIMINARY ORAL EXAMINATION

In partial fulfillment of the requirements for the Ph.D. Degree,

 (Student's Name)

 (Date)

has been examined by this Supervisory Committee. This Committee has taken the following action in regards to this student:

Pass

The student's progress and aptitude have been determined to be sufficient; the Committee recommends that this student be admitted to Ph.D. candidacy.

Conditional Pass

The student's progress and aptitude are largely satisfactory. However, the Committee has found that certain deficiencies must first be addressed prior to admission to Ph.D. candidacy. The Committee recommends that the student do further work. Such work may include (a) additional coursework to remedy a weak background (NOTE: undergraduate courses are not covered by the University's tuition benefit), or (b) a rewrite of the manuscript portion of the pre-oral examination. A repeat of the oral exam is not required with this decision. Requirements for a full pass should be noted in the space below.

Further requirements, comments:

Not Pass

The student's progress and/or aptitude is/are fair but not satisfactory for admission to Ph.D. candidacy. The Committee recommends the student do further work and repeat the exam a second (and final) time. The procedures will be the same as the first meeting. The action taken at this second (and final) meeting will be to (a) Pass the student with respect to his/her research progress and aptitude or to (b) Fail the student, thereby terminating the student's eligibility for the doctoral program. This second Exam must be completed prior to a date determined by the Committee, and should ordinarily be within 9 months of the first.

Fail

The student has not demonstrated satisfactory research progress or research aptitude and cannot be recommended for admission to Ph.D. candidacy.

Signatures of Supervisory Committee:

Research Proposal Defense

Report from the Supervisory Committee on the Oral Defense of the Research Proposal

Student Name:

Date of Oral Defense:

Proposal Title:

The submitted proposal and its oral defense by the student are judged to merit:

- Pass
- Marginal Pass (Revisions may be required by the committee.)
- Failure (The quality of the work is unacceptable. The proposal should be extensively revised or a completely different proposal should be submitted.)

Comments and Revisions:

Committee Members:

THE UNIVERSITY OF UTAH GRADUATE SCHOOL

REPORT OF THE FINAL ORAL EXAMINATION

FOR THE Ph.D. Ed.D. OR M.Phil. DEGREE

Date _____

Name of Student _____

Major Field _____ Minor Field _____
(For Ed.D. Degree)

Date of Examination _____

The student's examination was evaluated as follows by the committee:

Passed Failed

The student's dissertation was read and evaluated as follows by the committee:

Passed Failed

Signatures of supervisory committee:

Chair

EXIT INTERVIEW FORM

Name: _____

Title of Dissertation (Thesis): _____

Affiliation after leaving the University of Utah:

Title: _____

If position is a postdoc, with whom will you be working?

Business Address: _____

Phone: _____

Home Address: _____

Phone: _____

To which of the above addresses would you like your mail forwarded?

Business _____

Home _____

**UNIVERSITY OF UTAH – GRADUATE SCHOOL GRADUATE
STUDENT TRAVEL ASSISTANCE APPLICATION**

Applications for Graduate Student Travel Assistance are invited from currently enrolled University of Utah graduate students whose research or creative project has been accepted for presentation at a professional meeting. This assistance is contingent upon the applicant presenting at the meeting.

Applications must be received in The Graduate School prior to travel dates. Requests are considered up to a maximum of \$400 and must be supported with a dollar-for-dollar match from university funds. Matching support must be from university funding sources, e.g., development, operation, service, research, etc. One award only will be made during each fiscal year (July 1-June 30) to any graduate student.

Student travel assistance funding can reimburse airfare, car mileage (in lieu of airfare), ground transportation fares such as shuttles or taxis, lodging, abstract fees, and conference registration fees. The assistance will not reimburse meals, per diem, society memberships, or poster preparation fees.

Because travel requests in recent years have far exceeded funds available, The Graduate School requests departments or research units that can afford to support graduate student travel entirely on their own funds do so.

The Graduate School will determine total funds allotted for each month in the year; applications can be submitted any time before the travel dates but are considered only for funds allotted to the month in which the travel occurs - in the event of a trip spanning the end of one month and the beginning of another, the first date of travel will be used to determine the month to which the application will be applied. Funding is granted on a first come, first served basis until funds for the month are exhausted. Those applications not supported will be put on a reserve list for each month to be used in the event those awarded funding cannot or do not use it.

Incomplete applications result in delays in processing. Please check off each item below to verify that it has been included with your application. The Graduate Student Travel Assistance application must include:

1. A certification of eligibility to receive funding as a U.S. citizen or a citizen of another country who is lawfully present in the U.S. (page 2 of this form);
2. A completed application (page 3 of this form);
3. A copy of the abstract or project description submitted for the meeting;
4. A travel estimate for eligible expenses – you may use the online form found at the University of Utah Travel Department website:
<http://afs.admin.utah.edu/download/PreRegistrationAuthorization.pdf>
5. A single-page statement about the value of the meeting and presentation to your professional development as well as to the mission of your department or research lab.

For further information, please contact The Graduate School by phone at (801) 581-7642.

Please note that any awards that are not claimed by the department within 60 days of travel will be considered forfeited.

**Applications
for
Scholarships, Fellowships, Tuition Waivers, and Financial Aid**

Pursuant to SB-81, as of July 1, 2009, every University of Utah recipient of a scholarship, tuition waiver, or any other form of financial aid must undergo certification of lawful U.S. residency.

Students who receive a scholarship, fellowship, or other financial aid administered by the University of Utah are required by state law to certify that they are eligible to receive the scholarship as a U.S. citizen or a citizen of another country who is lawfully present in the U.S. If students do not know whether they are in the U.S. lawfully, they should seek the advice of an immigration attorney before filing a scholarship/financial aid application.

Prior to the disbursement of any scholarship/financial aid, the University of Utah is required by law to verify the recipient's citizenship status or lawful presence in the U.S. with the Department of Homeland Security (DHS). Once the University submits a student's information to DHS for verification, this federal agency may have the legal right to share the information with other government agencies.

Applicant Signature

By signing this application, I certify under penalty of perjury that I am either a U.S. citizen or a citizen of another country who is lawfully present within the U.S. I understand that my lawful presence within the U.S. will be verified through the Department of Homeland Security prior to an award of this scholarship/financial aid.

**UNIVERSITY OF UTAH – GRADUATE SCHOOL
GRADUATE RESEARCH STUDENT TRAVEL ASSISTANCE APPLICATION**

To be considered, applications must be received by the Graduate School prior to dates of travel.

NAME: _____

ADDRESS: _____

Campus Address E-mail Address _____

Academic Department/Division of _____

Degree Sought Degree & Approx. Completion Date _____

Have you received Graduate Research Student Travel Assistance before? No Yes If yes, what year? _____

MEETING: _____

CITY/STATE: _____ DATES: _____

TITLE OF PAPER/PRESENTATION: _____

FOR DEPARTMENT TRAVEL COORDINATORS:

MAXIMUM AMOUNT OF GRADUATE RESEARCH STUDENT TRAVEL ASSISTANCE IS \$400.00

DEPARTMENT WILL MATCH UP TO \$ _____

UNIVERSITY TRAVEL NUMBER: _____ (Required)

Your signature below indicates that you understand that any awards that are not claimed within 60 days of the date of travel will be forfeited by the department.

DEPARTMENT TRAVEL COORDINATOR _____

email address _____

Signatures indicate commitment to matching funds up to amount listed above and belief in scholarly merit of presentation to the academic field and to the student's academic career.

STUDENT ADVISOR'S SIGNATURE _____ Date _____

NAME OF ADVISOR _____ email address _____

DEPARTMENT CHAIR'S SIGNATURE _____ Date _____

NAME OF DEPARTMENT CHAIR _____ email address _____

Please return completed application to The Graduate School, University of Utah, 302 Park Building.

GRADUATE SCHOOL USE ONLY:

APPROVED: DATE _____ BY _____

APPROVED FOR: \$ _____

WAITING LIST: DATE _____ BY _____

Appendix C. Graduate Courses in Chemistry

Please visit <http://www.utah.edu/students/catalog.php> to determine which courses are offered during the current year.

CHEM 6810	Nanoscience	CHEM 7480	Physical Principles of Biomolecular Systems
CHEM 6510	Advanced Biological Chemistry	CHEM 7490	Metabolism
CHEM 6740	Bioanalytical Chemistry	CHEM 7500	Angular Momentum Theory
CHEM 7000	Introduction to Quantum Mechanics I	CHEM 7510	Condensed Phase Spectroscopy
CHEM 7010	Introduction to Quantum Mechanics II	CHEM 7520	Computational Chemistry Laboratory
CHEM 7020	Introduction to Spectroscopy I	CHEM 7530	Molecular Simulations
CHEM 7030	Introduction to Spectroscopy II	CHEM 7550	Adv. Topics Phys. Chem.
CHEM 7040	Statistical Thermodynamics	CHEM 7560	Adv. Topics Inorg. Chem.
CHEM 7050	Classical Thermodynamics	CHEM 7570	Adv. Topics Org. Chem.
CHEM 7060	Statistical Mechanics	CHEM 7580	Adv. Topics Biol. Chem.
CHEM 7070	Chemical Kinetics	CHEM 7590	Adv. Topics Analyt. Chem.
CHEM 7080	Chemical Dynamics	CHEM 7700	Transport and Chemical Analysis
CHEM 7100	Principles of Inorganic Chemistry	CHEM 7710	Advanced Chemical and Analytical Measurements
CHEM 7110	Inorganic Mechanisms	CHEM 7720	Separations
CHEM 7120	Physical Inorganic Chemistry	CHEM 7730	Electrochemistry
CHEM 7130	Solid State Chemistry	CHEM 6740	Bioanalytical Chemistry
CHEM 7150	Bioinorganic Chemistry	CHEM 7750	Information Processing
CHEM 7160	Organometallic Chemistry I	CHEM 7760	Instrumentation Electronics
CHEM 7170	Homogeneous Catalysis	CHEM 7770	Analytical Spectroscopy and Optics
CHEM 7200	Contemporary Organic Synthesis I	CHEM 7780	Surface Chemistry
CHEM 7210	Contemporary Organic Synthesis II	CHEM 7850	NMR Spectroscopy Laboratory
CHEM 7220	Contemporary Organic Synthesis III	CHEM 6900	Directed Study (by permission of Dept.)
CHEM 7230	Organometallic Chemistry II	CHEM 6970	Thesis Research M.S.
CHEM 7240	Physical Organic I	CHEM 6980	Faculty Consultation
CHEM 7250	Physical Organic II	CHEM 7860	Research Group Seminar
CHEM 7260	Physical Organic III	CHEM 7600	Faculty Research Presentations
CHEM 7270	Organic Spectroscopy I	CHEM 7800	Physical Seminar
CHEM 7280	Organic Spectroscopy II	CHEM 7810	Inorganic Seminar
CHEM 7290	Organic Chem. of Materials	CHEM 7820	Organic Seminar
CHEM 7410	Protein and Nucleic Acid Biochemistry	CHEM 7840	Biological Seminar
CHEM 7430	Chemical Biology of Proteins and Nucleic Acids	CHEM 7870	Analytical Seminar
CHEM 7450	Biophysical Chemistry	CHEM 7970	Thesis Research Ph.D.
CHEM 7460	Protein Chemistry	CHEM 7980	Faculty Consultation
CHEM 7470	Nucleic Acid Chemistry	CHEM 7990	Continuing Registration: Ph.D.