GUIDELINES FOR

GRADUATE STUDY

MEDICINAL

CHEMISTRY

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## GUIDELINES FOR GRADUATE STUDY AND GRADUATE SCHOOL PROCEDURES & INFORMATION

##### For official policies related to the Graduate School at the University of Utah, please refer to the Graduate Catalogue at:

[**http://gradschool.utah.edu/graduate-catalog/attendance/**](http://gradschool.utah.edu/graduate-catalog/attendance/)

###### Note: If you have questions, please talk with the staff in the Department Office first before going directly to the Dean or staff in the Graduate School!

**POINTS OF CONTACT (IN ORDER OF APPROACH):**

Graduate/Academic Advisor – Terri L. Elder-Hale, [tle3@utah.edu](mailto:tle3@utah.edu)

Director of Graduate Studies – Prof. Philip Moos, [Philip.Moos@pharm.utah.edu](mailto:Philip.Moos@pharm.utah.edu)

Chair of your committee, committee members, or your dissertation advisor

Department Chair – Prof. Darrell Davis, [darrell.davis@utah.edu](mailto:darrell.davis@utah.edu)

Dean, College of Pharmacy – Prof. Randall Peterson, [randall.peterson@utah.edu](mailto:randall.peterson@utah.edu)

##### OTHER PLACES OR POINTS OF CONTACTS FOR SPECIFIC INFORMATION:

International Student & Scholar Services Office, [international@utah.edu,](mailto:international@utah.edu) 801-581- 8876 – Note that the required forms, policies, and procedures change frequently! Information from the International office might be about your last semester, Optional Practical Training (OPT), Leave of Absence, anything to do with your visa status, etc.

Office of the Registrar, [registration@utah.edu,](mailto:registration@utah.edu) 801-581-5808 – If you can’t register, they can usually tell you why. *Depending on the time of year, the phone wait time can be pretty long*. Information from this office could be about grading, enrolling, Change of Graduate Classification, Leave of Absence, etc.

Graduation Division, [graduation@utah.edu,](mailto:graduation@utah.edu) 801-581-5808 – Applying for graduation

– Information may be about applying for graduation, statement of degree completions, etc. – the Graduate School and my office can no longer issue you letters verifying that you have graduated. They MUST come through the Registrar’s Office.

Transcript & Verification Division Office, 801-581-5808 – you always have access to an unofficial copy of your transcript through your CIS webpage. Information about transcripts, degree letters after the degrees have been posted, etc.

Thesis Office – Always go to their website first. They are really good at updating and keeping you informed. <http://gradschool.utah.edu/thesis/>

## PROGRAM OF STUDY IN THE DEPARTMENT OF MEDICINAL CHEMISTRY

##### FIRST YEAR - Fall and Spring Terms

Normally students are not admitted to the Department of Medicinal Chemistry directly. Instead students typically transfer into the department from one of the Bioscience or other Graduate Programs in the late spring of their first year. In rare exceptions, if you are a direct entry student, refer to the course of study for students in the 1st year of the Biological Chemistry graduate program, i.e. see:

<http://www.bioscience.utah.edu/biological-chemistry/index.php>

Additionally, register for Medicinal Chemistry Seminar Series (MD CH 7890, 1 credit hour per term). **All students should be registered for a total of 11 credit hours.**

If you are a direct entry student either participate directly with the admitting research laboratory or follow policies on lab rotations based on the terms specified in your admissions offer letter from the department.

###### FIRST YEAR BY THE END OF SPRING TERM

The following three conditions should have been met.

* 1. You have previously done a research rotation in a Medicinal Chemistry faculty lab, you have selected a dissertation advisor, and you have been admitted into the dissertation advisors research group.
  2. You have completed the core courses and recommended course of study offered by the respective program in your first year and you have passed the capstone exam if it is offered by your program.
  3. You are not on academic probation (GPA below 3.0).

If any of these conditions has not been met, please consult with the Departmental Graduate Advisor.

##### FIRST YEAR - Summer Term

Register for 3 credit hours in MD CH 7970. See the Departmental Graduate Office regarding specific subsections of this course.

##### SECOND YEAR - Fall and Spring Terms

Register for 11 credit hours per term for both terms (required and/or elective course work, plus any remaining hours in MD CH 7970).

Register for Research Seminar each term (MD CH 7890, 1 credit hour). During January or February of the Spring term, present either a “Research-in-Progress” report or a Journal Club in the Departmental Seminar Series.

Continue dissertation research and begin to think about who you may want to involve on your Supervisory Committee (and most notably, faculty members from outside the department since you will likely use them both on your Preliminary Examination Committee and your Supervisory Committee).

*Prepare for the Preliminary Examination in the early spring*. This includes oral defense of a written research proposal before an appointed Preliminary Examination Committee. When the oral qualifying examination date is set, send an email to the Preliminary Examination Committee, your Dissertation Advisor, as well as the Departmental Graduate Office, outlining date/time/place of the meeting.

When the Preliminary Examination Committee approves the oral qualifying exam submit to the Departmental Graduate Office the “Report of the Qualifying Examination for the Ph.D.” form with the appropriate committee signatures.

Formulate your Supervisory Committee of 5 members (composition: typically 4 Medicinal Chemistry faculty, including your dissertation advisor, plus 1 outside of the Department faculty as members; the majority of the faculty on the committee, including the Chair, must be tenure-line faculty.

Obtain “Request for Supervisory Committee Form” from Departmental Graduate Office return it to Departmental Graduate Office for final copy preparation and entry into the Graduate Student Degree Tracking on the CIS portal.

##### SECOND YEAR - Summer Term

At the start of Summer Term non-resident U.S. Citizens must apply for Utah residency, once you have 40 credit hours. This includes acquiring Utah registration for your vehicle.

Register for 3 credit hours in MD CH 7970. See the Departmental Graduate Office regarding specific subsections of this course.

##### THIRD YEAR - Fall and Spring Terms

Register for 11 credit hours per term (required and/or elective course work, in consultation with your Dissertation Advisor and optionally your Supervisory Committee) filling out any remaining hours in MD CH 7970 (Research).

Register for Seminar (MD CH 7890, 1 credit hour per term), and give a “Research-in- Progress” presentation one time during the academic year.

Hold the initial Supervisory Committee meeting to outline your research project and to obtain approval of course work, if this was not done following your Preliminary Examination in the second year. Send an email to supervisory committee members, as well as the Departmental Graduate Office, outlining date/time/place of the meeting. Further details are in Chapter 7.

Continue dissertation research.

Normally, the one-semester requirement for a Teaching Assistantship is fulfilled during the third or fourth year.

##### THIRD YEAR - Summer Term

Continue dissertation research. Register for 3 credit hours in MDCH 7970.

##### REMAINING YEARS

Register for 11 credit hours per term in MD CH 7890 (Research) and/or optional research- related elective classes (in consultation with your Dissertation Advisor and optionally your Supervisory Committee) subject to Tuition Benefit Program (TBP) eligibility. Note, if you have questions about TBP eligibility, contact the Medicinal Chemistry Graduate Office.

Register for MD CH 7970 (Seminar), depending on TBP eligibility, and give one “Research-in-Progress” presentation each year. *Note: Attendance is mandatory, regardless of whether you are registered for the course.*

Continue/complete dissertation research.

*Hold Supervisory Committee meetings every nine to twelve months*. Send an email to all Supervisory Committee members, as well as to the Departmental Graduate Office, outlining date/time/place of the meetings. Following each meeting, file the current version of the Graduate Student Progress form, which you took to the meeting, with the Departmental Graduate Office.

##### GETTING CLOSE TO GRADUATION?

One term but **no earlier than one year before graduation** submit a completed “Program of Study for Ph.D. ...” to the Departmental Graduate Office. The department updates your electronic file in CIS. You must complete an Application for Graduate Degree with the Graduation Division of the Office of the Registrar.

***Deadlines for all requirements are clearly stated on The Graduate School website, and it is the student’s responsibility to observe all deadlines and to check with the Departmental Graduate Office if anything on the Requirements Audit Tab is incomplete.***

***Note: The deadlines are much earlier in the semester than you might otherwise expect.***

<http://gradschool.utah.edu/current-students/graduation-overview-for-doctoral-candidates/>

Begin writing dissertation. To ensure that the required format is being used, review the link of “A Handbook for Theses and Dissertations” from the Thesis Editor’s website.

https://gradschool.utah.edu/thesis/

It contains information on The Graduate School’s policies and procedures for preparing a thesis or dissertation, having it reviewed by the Thesis Editor, and uploading it as a PDF for electronic publication, which is the final requirement for graduation. It Handbook includes explanations of the format, examples of pages and forms, and a discussion of copyright issues. The Thesis Editor accepts only approved formats.

##### FINAL TERM

Apply for Graduation through the Office of the Registrar.

Register for MD CH 7980: Faculty Consultation (3 credit hours), for the term in which the final oral examination is held. Whether you register for additional hours depends on your TBP status; consult the Departmental Graduate Office before registering.

Complete writing your dissertation.

Provide your Supervisory Committee with copy of the dissertation at least 14 days before oral defense.

Present the final seminar on dissertation research. This seminar is given in conjunction with the Final Oral Examination as described below.

Orally defend the dissertation before the Supervisory Committee. *Send an email to all supervisory committee members, as well as the Departmental Graduate Office, outlining date/time/place of the meeting, and containing an abstract of your thesis and a short biographical sketch.* The dissertation defense will be advertised as a public seminar.

After the defense and approval of the dissertation by the Supervisory Committee, the student will turn the thesis in to the Thesis Editor. After approval, the Thesis Editor will send a release to the Graduate Office. The Thesis Editor pages have information on options for obtaining hard-copies of the thesis. **Note ALL binding costs are the responsibility of the student!**

##### Factors that can result in not graduating include the following:

##### Unavailability of the student to participate in the ongoing editing process

##### Major formatting errors (see the Handbook)

##### Major problems with grammar, spelling, etc.

##### Manuscripts that have not been approved by the supervisory committee

Submissions on the deadline that have any of these problems will not be considered for that semester. Please take these factors into account when planning defense and graduation dates.

The entire editing process can take 2 or more months to complete, so the earlier a manuscript is submitted, the better the student’s chance of graduating in the desired semester.

***TUITION WAIVERS AND TEACHING ASSISTANTSHIPS***

**GRADUATE STUDENT TUITION WAIVERS**

Tuition waivers are normally awarded by the Graduate School for ten terms (five years) of graduate work, toward the completion of a doctorate, for students entering our program with a Bachelor’s degree, or eight terms (four years) for those entering with a Master’s degree (unless that Master’s degree is from the University of Utah which reduces the TBP to two years for Master’s and three for PhD). The TBP covers in-state tuition only, once 84 credit hours are accumulated. All class work should be completed before that threshold.

The TBP covers 9-11 graduate credit hours. It does not apply to undergraduate, contract and/or audited courses, or repeated courses. If you drop or add a class after published deadlines you are responsible for tuition costs and all fees. If you do not maintain at least nine credit hours, you lose TBP eligibility. If you lose TBP you will receive a bill at the end of the semester that you are responsible to pay.

You must be a full-time matriculated graduate student in good standing with a cumulative GPA of 3.0. **Students on academic probation are not eligible for TBP.**

When supported as a PhD student, you cannot exceed a 0.74 FTE and remain TBP eligible. An FTE of 0.5 is the recommended maximum. The Department considers full-time research support for graduate students to be full-time job and the expectation of long irregular hours required for successful degree completion preclude pursuit of other gainful employment without interference with doctoral program progress. Therefore, students are strongly discouraged from engaging in employment outside the Department. Only with a PIs approval and a strong argument will additional employment be allowed.

Domestic out-of-state graduate students who receive the tuition benefit must apply for state residency at the end of their first year of study or before 40 credit hours.

Students demonstrating sufficient progress and quality performance towards their degree may arrange with their faculty advisor for time off. It is the responsibility of the student to plan all leaves and vacations with his/her advisor, noting that academic breaks (Fall, Holiday, Spring) are not automatically approved vacations from research responsibilities. Any absences not planned in advance may not be compensated for.

The full policy document is available on The Graduate School web page. Your familiarity with this policy is acknowledged through your signature each semester when you read the policy statement and e-sign on your STUDENT tab in CIS.

##### TEACHING ASSISTANT (TA) REQUIREMENT

Graduate students in the Department of Medicinal Chemistry are required to engage in one term as a teaching assistant.

**Course selection.** Courses will be selected from the Pharmacy Professional curriculum or other suitable graduate courses as determined by the faculty.

**Timing.** The TA requirement will normally be fulfilled during the student’s third year in the program after successful completion of the preliminary exam.

##### Obligations.

1. TAs should attend all lectures and be familiar with all materials covered in class.
2. TAs should contribute in a substantive way to the pedagogical needs of the course.

This will be determined by the instructor and the particular nature of the course. For example, TAs would be expected to undertake one or more of the following activities:

1. deliver one or more lectures in the course
2. lead problem-solving or discussion sessions prior to examinations
3. participate in preparation and grading of the examinations.

TAs should plan on spending 3-4 hours/week in class and an average of an additional 3 to 5 hours/week for the other pedagogical activities related to the course. It is recognized that the additional assignments will be “patchy” in nature, with greater effort required for lecture and examination preparations.

The TA will remain supported by his/her PI during the TA assignment.

**LEAVE AND DISMISSAL POLICIES**

**Policy on Parental Leave**

A new parent (student or postdoc) is entitled to six weeks of leave with full pay and benefits following the birth or adoption of a child. The six week leave may be taken by either parent, or split between parents. New parents are also entitled to take up to an additional six weeks of leave without pay, if they so choose, although this could reduce their tuition benefit. The parental leave should be completed within six months of the arrival of the new child, and may only be taken for purposes relating to childcare. Under normal circumstances students should arrange the leave time with their advisor and the Departmental DOGS at least 30 days in advance. Although we do not anticipate any conflict, this policy might be superseded by an external agency, such as University policy or by the requirements of a funding organization.

**Policy on Vacation and Work Hours**

The NIH, the Graduate School, and the Department all agree that being a graduate student is a full-time job. Many fellowships and awards explicitly stipulate that students are not allowed to take vacation time while supported on the grant. The departmental policy may be superseded by policies of granting agencies.

The policy of the department is that students are expected to work full time in the laboratory (a minimum of 40 hours per week).

Students are free to negotiate vacation time with their advisors, with a recommended 2 weeks of vacation per year. Any time away from the laboratory must be approved by the advisor well in advance of the requested vacation time.

The Department recommends that students do not pursue employment outside of the laboratory due to the high likelihood that such activity will delay the completion of their doctorate and impair the quality and quantity of their research. Second positions that interfere with the full-time work of the student must be approved by the advisor.

It is in the best interest of the student to consider graduate research a full-time position. Working consistent hours in the laboratory will minimize the time required to complete the Ph.D. In most cases, student salaries are paid from grant funds--funds that will not be renewed if the work is not completed. Any activity that delays the timely completion of your project not only affects how long it takes you to graduate, but could seriously impair the ability of your advisor to support you and other people in the laboratory.

**Policy on Dismissal from the Program**

While most students succeed in our program, there are situations where graduation is not an option and a student may be dismissed from the program. These may include:

* Failure to pass all courses (grade of B- or better)
* GPA (either cumulatively or in a particular semester) of less than 3.0
* Unsatisfactory completion of a laboratory rotation or unsatisfactory research performance
* Failure to pass a milestone exam
* Behavioral, academic or scientific misconduct
* Failure to find a dissertation laboratory
* Failure to make timely progress toward completion of the doctoral degree as determined by the student’s supervisory committee.

**Safety and Wellness**

Your safety is our top priority. In an emergency, dial 911 or seek a nearby emergency phone (throughout campus). Report any crimes or suspicious people to 801-585-COPS; this number will get you to a dispatch officer at the University of Utah Department of Public Safety (DPS; [dps.utah.edu](http://dps.utah.edu)). If at any time, you would like to be escorted by a security officer to or from areas on campus, DPS will help - just give a call.  
  
The University of Utah seeks to provide a safe and healthy experience for students, employees, and others who make use of campus facilities.  In support of this goal, the University has established confidential resources and support services  to assist students who may have been affected by harassment, abusive relationships, or sexual misconduct. A detailed listing of University Resources for campus safety can be found at <https://registrar.utah.edu/handbook/campussafety.php>  
  
Your well-being is key to your personal safety. If you are in crisis, call 801-587-3000; help is close. 

The University has additional excellent resources to promote emotional and physical wellness, including the Counseling Center (<https://counselingcenter.utah.edu>), the Wellness Center (<https://wellness.utah.edu>), and the Women's Resource Center (<https://womenscenter.utah.edu>). Counselors and advocates in these centers can help guide you to other resources to address a range of issues, including substance abuse and addiction.

## GUIDELINES FOR CURRICULUM

##### The First Year Medicinal Chemistry Curriculum Closely Follows that for the Biological Chemistry Program, most PhD students enter the Department from the Combined Graduate Programs at the end of Spring Semester, year 1.

**See:** [**http://www.bioscience.utah.edu/biological-chemistry/program-guidelines/**](http://www.bioscience.utah.edu/biological-chemistry/program-guidelines/) **BCPstudentrequirements.php**

**Fall Year 1 (11 credits)**

|  |  |  |
| --- | --- | --- |
| **Course** | **Number** | **Title** |
| MBIOL | 7570 | Case Studies and Research Ethics |
| BLCHM | 6410 | Protein & Nucleic Acid Biochemistry |
| BLCHM | 6400 | Genetic Engineering |
| BLCHM | 6460 | Protein Chemistry (2) |
| BLCHM | 6450 | Biophysical Chemistry (2) |
| BLCHM | 6060 | Faculty Research Interest Seminar |
| BLCHM | 7960 | Research |

**Spring Year 1 (11 credits)**

|  |  |  |
| --- | --- | --- |
| **Course** | **Number** | **Title** |
| BLCHM | 6200 | Critical Thinking in Research |
| BLCHM | 6300 | Guided Proposal Presentation |
| BLCHM | 7960 | Research |
| Electives | 3 hours | 2019 Spring Semester BC Grid |
| Oral Capstone Exam | |  |

Electives vary year to year, see: <http://www.bioscience.utah.edu/students/curriculum.php>

##### Fall Year 2 (11 credits) – The student has joined a Medicinal Chemistry Laboratory by this time.

##### The student in consultation with their dissertation advisor should propose at least two advanced PhD-level didactic courses to be taken in Fall semester of Year 2. The courses are required to complement the student’s planned dissertation research and provide specific training relevant to their proposed research project. The two advanced elective courses will be presented by the advisor to the Medicinal Chemistry faculty for approval at either the July or August faculty meeting preceding the student’s Fall Year 2 semester.

##### A typical course selection for Medicinal Chemistry PhD students for Fall Year 2 is presented below. Alternate selections should be equally as rigorous as the traditional selections, and must provide specific training relevant to the student’s proposed research.

|  |  |  |
| --- | --- | --- |
| **Course** | **Number** | **Title** |
| CHEM | 7200 | Organic Synthesis I (2) |
| CHEM | 7240 | Physical Organic Chemistry I (2) |
| MDCH | 7890 | Research Seminar in Medicinal Chemistry (1) |
| MDCH | 7970 | Thesis Research |

##### Spring Year 2 (11 credits)

|  |  |  |
| --- | --- | --- |
| **Course** | **Number** | **Title** |
| MDCH | 7890 | Research Seminar (1) |
| MDCH | 7970 | Thesis Research |

Total credit hours registered for in any semester (Fall, Spring) should total 9 by adding MD CH 7970: Dissertation Research to make up the difference.

No specific number of credit hours is required for completion of the Ph.D. degree with the exception of a minimum of 18 credit hours in MD CH 7970: Thesis Research. Be sure to use the correct section number, corresponding to your advisor. Decisions on extent and type of course work requires discussion with and approval by a student’s supervisory committee.

##### GPA requirements: At all times, a cumulative GPA of 3.0 in course work and a grade of B- or above in all core classes is required to remain “in good standing” and to avoid academic probation. A grade below C is not accepted for credit towards a graduate degree. Tuition waivers from The Graduate School are suspended at the end of the semester in which a cumulative GPA falls below 3.0. Discharge from the Medicinal Chemistry Graduate Program will occur if removal from probation is not accomplished within two terms (summer term excluded). Students who are no longer eligible for tuition waivers due to poor academic performance are responsible for payment of their tuition and health insurance. A full statement of the policy can be found at: [*http://www.gradschool.utah.edu/*](http://www.gradschool.utah.edu/)

##### *LABORATORY ROTATIONS*

First-year graduate students in the Department of Medicinal Chemistry who have not undertaken a fixed research program are required to complete up to three laboratory rotations with different faculty members within the department. In addition to helping students choose a dissertation advisor, the rotations provide exposure to areas of research that might not otherwise be experienced, familiarize students with ongoing departmental research emphases and personnel, and teach experimental techniques that may be useful in subsequent dissertation research. An agreement to carry out the rotation, and identification of the project topic, requires agreement from both the student and the faculty member.

1. Satisfactory performance in all laboratory rotations is required in order to be considered “in good standing” and to be recommended for retention in the graduate program. Satisfactory performance will be defined in detail by each faculty member, but will generally include:
2. Initial discussion with the faculty member concerning conceptual and methodological details and expected outcomes of the rotation project;
3. Performance of laboratory and scholarly activity commensurate with the rotation project;
4. Attendance at and participation in group research meetings and departmental seminar;
5. Submission of a one to two page rotation report to your rotation advisor and also to the Departmental Graduate Office. These reports should be sent as email attachments. The report will include (a) a description of the background of the rotation project; (b) a statement of the specific problem addressed during the rotation; (c) a description of the experimental approach to the problem; (d) a summary of the experimental results; and (e) a thoughtful discussion of the results, along with the appropriate conclusions. The emphasis of the report will be on the explanation of the scientific problem and experimental approach, rather than on obtaining a large body of results.

Assessment of performance will be made by the faculty rotation advisor in conjunction with the full faculty. Students may be subject to dismissal from the Medicinal Chemistry Graduate Program by majority vote of the faculty if their performance in laboratory rotations is considered unsatisfactory.

## SEMINARS AND PRESENTATIONS (MD CH 7890)

##### FIRST-YEAR STUDENTS ROTATING THROUGH MEDICINAL CHEMISTRY LABS:

First-year rotation students from other programs will be required to attend Medicinal Chemistry seminars and research-in-progress (RIPs), but will not be required to make a presentation.

##### SECOND-, THIRD-YEAR, ETC., MEDICINAL CHEMISTRY STUDENTS:

**In the second year of their graduate tenure, students will present a 30-minute “Journal Club” presentation on an important research topic from the current literature (or optionally a RIP if they have sufficient material).** In every subsequent year of their graduate tenure, students will be required to present a 30-minute “Research-in-Progress” (RIP). Students will continue to register for 1 credit of MD CH 7890 per term throughout this time. Even if you are not registered, for example due to timing out of TBP eligibility, you are still required to attend the weekly department RIP and any college-wide College of Pharmacy seminar.

Research-in-progress will meet periodically throughout fall and spring terms. We try not to schedule during finals week and term breaks, but those dates may be utilized by the College. RIPs will be interspersed with the regular Thursday afternoon seminars at 4:00 p.m. Assignments of student presentations will be made by the Seminar Coordinator. Two 30 minute RIPs will be presented at each session.

A **Dissertation Seminar** is required during the student’s final year and will be presented to the department immediately prior to the final oral defense examination. The Dissertation Seminar does not necessarily need to be presented on a Thursday; however, it should start no later than 3:00 p.m. in order to allow time for the final Oral Examination.

**SEMINARS BY OUTSIDE SPEAKERS:** All students and post docs are required to attend college-wide seminars by visiting speakers, usually Thursday afternoons (inter-dispersed with college-wide RIPs). Visiting seminar speakers will be asked to set aside time for a group discussion with the graduate students and postdoctoral associates before their seminar. **All students are required to attend these sessions and RIP presentations.**

##### GRADING is handled on a CR/NC basis.

**CRITIQUE OF RIP PRESENTATION:** Your presentation will usually be critiqued by your dissertation advisor (or his/her designated replacement). Satisfactory performance will be based on (a) comprehension of subject matter; (b) clarity of oral presentation; (c) depth of coverage; (d) quality and effective use of audio/visual material; and (e) management of the question/answer period. Satisfactory performance, and continued improvement in your presentation skills are expected in order for the student to remain in good standing in the Medicinal Chemistry Graduate Program.

## PRELIMINARY EXAMINATION AND SUPERVISORY COMMITTEE

##### PRELIMINARY EXAMINATION

Please read these guidelines for the Preliminary Examination carefully. Note particularly the time-frame, which is designed to be long enough to allow serious consideration of your proposal topics without compromising your progress in dissertation research.

1. The preliminary exam will be conducted by the **Preliminary Examination Committee,** this committee is selected by the Department Chair. Your Dissertation Advisor will not attend the exam. Each student will be assigned an examination committee consisting of four faculty members from the Department of Medicinal Chemistry. One additional committee member from outside the department should be chosen by the student in consultation with their dissertation advisor. Normally this outside person will continue service in the Supervisory Committee. An examination chairperson will be appointed in advance from members of the Preliminary Examination Committee. The examination chairperson’s duties include ensuring that you understand the examination procedure and to monitor your progress during the exam period. A quorum for conduct of the exam will be at least three faculty members, two of whom must have primary appointments in the Department of Medicinal Chemistry.
2. The first part of the exam is written submission of “Specific Aims”. The Specific Aims are a 1-page, NIH-style Specific Aims document. **It is due to the committee on the first Monday in March** (during your second year of graduate work).
3. The full written exam should be prepared in the format of a NIH F32 style postdoctoral research application, and specifically be 1-page Specific Aims, 6-pages for the research proposal (single spaced, including figures but excluding references). [*http://grants.nih.gov/*](http://grants.nih.gov/) *grants/funding.* The topic of the research proposal should be based on the students dissertation research, but should be written and designed by the student *without input* from their dissertation advisor.
4. **The Preliminary Oral Examination Process:** At the beginning of the exam, you will be asked to leave the room so that the Committee can discuss the proposal. You will then be asked to give a short (approximately 20 minutes) formal presentation on your proposal. You should expect questions from the Examination Committee during and after your presentation. They will attempt to discover whether you are able (a) to demonstrate an understanding of the significance of the proposal with respect to the current state of knowledge in the field, (b) to demonstrate an understanding of both the theoretical and practical aspects of the methods and procedures in the proposal, and (c) to defend the rationale of the experimental designs and approaches.

Although the majority of the questioning may focus on the proposal, inquiries of a more general nature can also be expected. You should therefore be prepared to answer questions concerning material covered in the Curriculum Core Courses. A detailed recall of the material is not required but a firm familiarity with general principles is expected. **You are strongly encouraged to review the material covered in the Curriculum Core Courses prior to the examination.**

When the examination is completed, you will once again leave the room so that your performance can be evaluated. A critical evaluation of the examination will then be made. A passing performance requires the approval of a majority of the three members of the Preliminary Examination Committee. Students not performing to the satisfaction of the Committee on the written proposal and/or oral parts of the exam will either be failed outright or asked to address the deficiencies in a manner and schedule agreed upon by the Committee. If a student fails the exam, he or she may be allowed to retake portions of the exam, or may be dismissed from the Ph.D. program.

The forms for reporting the results of the examination (“Report of The Qualifying Examination for the Ph.D. and Recommendation for Admission to PhD Candidacy”) must be returned to the Departmental Graduate Office. It is your responsibility to see that this form is completed properly. **It is important to have this form completed during the week before your oral exam, and to bring this form to your preliminary exam.** Please also inform the Department of Medicinal Chemistry Graduate Coordinator when you have scheduled your Preliminary Exam, and also with the results when the exam is finished.

##### Oral and Written Preliminary Exam Timeframe:

First Monday in March – distribute Specific Aims to the Preliminary Exam Committee who will then approve or suggest modifications.

Two weeks prior to Oral Examination – distribute full proposal to the Preliminary Exam Committee

First two weeks of April – Hold Oral Exam. The evaluation could be pass, fail, or conditional pass (in which the student will be asked to address deficiencies).

**Failure to schedule your Preliminary Exam is NOT an acceptable excuse for delaying the passing of your Preliminary Oral Exam beyond the end of Spring Term of your second academic year.** Out-of-town or illness-related absences of Examination Committee members should not be allowed to influence the overall duration of the Preliminary Examination process. If you foresee significant delays in this regard, discuss with the Examination Committee Chair the possibility of substitution of one committee member.

**What makes up a good research proposal?** You should realize that the selection of good and original research topics and well defined specific aims is half the battle. We are looking for: **1) Hypothesis-driven research proposals.** Avoid data collection expeditions. **2) Scientific importance.** Clearly explain how and why your proposal addresses important aspects of fundamental problems in medicinal or biological chemistry.

**3) Originality.** The proposal should demonstrate an original approach to an important problem. You may, of course, propose to use well established techniques, but we want to see clear evidence that your proposal will offer some fresh new insight, model, or approach in solving your problem. **4) Definition and feasibility.** You need to make it clear that you are proposing to do research that can actually be successful. It is therefore important to focus your ideas so that it is clear exactly what you propose to do and that you have considered possible pitfalls and reasonable alternative approaches. The proposed project should be one that you could accomplish in a two- to three-year period.

**It is understood that the experiments described in the proposal should originate from the student.** You may check with Committee members concerning the mechanics of preparing the proposal but you **may not discuss** with Committee members **any aspects concerning the selection and feasibility of topics, or the design of experiments to be used.**

##### PhD SUPERVISORY COMMITTEE

After passing the Preliminary Exam, it is time to form your Supervisory Committee. This committee advises the student concerning dissertation research and seminar topics, and presides over the writing and oral defense of the dissertation. This committee is **your** team and meeting with them through the years should be a positive, productive experience, not an adversarial one. Choose members of the committee in consultation with your dissertation advisor. **It is expected that students must have selected a five member Supervisory Committee by the end of Spring Term in the second academic year.**

You and your Dissertation Advisor should work together to form a Supervisory Committee, consisting of five members, with the Dissertation Advisor as the chairperson. Three members must have regular faculty appointments in the Medicinal Chemistry Department and at least one member must be from outside the department. The majority of the members must be tenure-line faculty. The composition of the committee must be reported to and eventually approved by both the Department and the Graduate School.

The first meeting of your full Supervisory Committee following the preliminary examination will take place during the summer or first two weeks of the Fall Term of your third graduate year. At this meeting you will present an outline of your **Dissertation Research Plan.** Your Dissertation Advisor will attend. You will deliver a carefully thought out printed version of this document to your Supervisory Committee one week prior to the meeting.

The Plan will be a maximum of five pages, and will include: list of specific aims of your dissertation; introduction and rationale for the work; summary of preliminary results; outline of work you intend to carry out over the next year; and maximum of five important literature citations, using the same citation format as for your original research proposal in the preliminary exam.

At the time of this meeting the Committee will judge the acceptability of your written plan, your oral presentation, and your defense of the plan.

You are required to meet with your Supervisory Committee annually until your graduation. **To each meeting bring updated copies of your “Record of Graduate Student Progress” for distribution to committee members.** (This form is available from the Departmental Graduate Office, or has been emailed to you.) At least four of the five Supervisory Committee members must be present at each meeting. Failure to schedule and hold committee meetings in a timely fashion may lead to dismissal from the Ph.D. program. More frequent meetings may be held if desired by the student and/or the committee. **The student is responsible for scheduling these meetings, and for recording their completion.** The latter is done by notifying the Departmental Graduate Office, either in writing or via email. It is also useful for the Dissertation Advisor to prepare a written report of each meeting to aid in gauging the student’s progress.

## FINAL ORAL EXAMINATION FOR THE PH.D DEGREE

The final oral examination will be completed during the student’s last term in the graduate program. The final oral exam typically follows immediately after the Dissertation Seminar as described below.

The completed doctoral dissertation will be submitted to the student’s supervisory committee no less than 14 days prior to the final oral examination. A title, a concise abstract, a brief biography, the date, location and time for the final exam must be submitted at the same time to the Academic Advisor. The final oral examination will consist of a 50 minute public seminar where the student will present a summary of their dissertation research. The general public will then be dismissed, and the examination will continue in private before the student’s supervisory committee.

The supervisory committee will evaluate whether the student (a) passes, (b) should revise parts of the dissertation, (c) should retake the oral examination, or (d) fails. When a student satisfactorily passes the final oral examination, the supervisory committee signs off on the “Report of the Final Oral Examination.” Upon satisfactory completion of recommended changes to the dissertation by the supervisory committee, the chair of the committee and the chair of the Department of Medicinal Chemistry sign the “Final Reading Approval” form. The candidate takes the form to the Graduate School for the signature of the Dean of the Graduate School and then delivers the entire dissertation with supervisory committee signature sheets and the “Final Reading Form” to the Thesis Editor for approval.

Note that the cost of binding the final dissertation as required by The Graduate School (see: “A Handbook for Theses and Dissertations”) are to be borne by the student. Preparation costs for preliminary copies as required by the Supervisory Committee are normally covered by the Dissertation Advisor as standard research expenses.

If a student fails the final oral examination, she/he has the option of retaking the oral examination one more time. After the second attempt if the student again fails to satisfactorily complete the examination, the student will be dismissed from the Graduate Program in Medicinal Chemistry.

All work for the Master’s degree must be completed within four consecutive calendar years. On recommendation of the student’s supervisory committee, the Dean of The Graduate School can modify or waive this requirement. If the student exceeds the time limit and is not granted a modification or waiver, the department has the option to discontinue the student. Students whose studies have been interrupted for long periods of time and who have been granted extended time to complete their degrees may be required to complete additional courses, to pass examinations, or otherwise to demonstrate that they are current in their field.

The time limit for completing a Ph.D. degree is determined by Departmental policy approved by the Graduate Council, with a default time limit to Ph.D of 7 years. Requests to exceed established time limits must be recommended by a candidate’s supervisory committee and approved by the Departmental director of graduate studies and the Dean of the Graduate School. Students whose studies have been interrupted for long periods of time and who have been granted extended time to complete their degrees may be required to complete additional courses, to pass examinations, or otherwise to demonstrate that they are current in their field.

**RECORD OF STUDENT PROGRESS**

Name:

Date:

Email:

Phone:

**Education:**

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| --- | --- | --- | --- |
| **DEGREE** | | | |
| Institution | Date awarded | Subject | Degree title (B.S., etc.) |
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**Department graduate program date of entry (semester - year):**

* Direct Entry  Biological Chemistry  Molecular Biology
* Other:

**Estimated date of graduation? (semester - year):**

Utah residency requirement met?  yes Date:

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**Lab rotations within Medicinal Chemistry?**

* no
* yes (lab name and date):

(lab name and date):

(lab name and date):

**Core courses taken:**

|  |  |  |
| --- | --- | --- |
| Core Courses | Qtr./Sem.-Yr. Taken | Grade |
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**Presentations** **(indicate RIP or Seminar):**

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| --- | --- |
| Title | Date |
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Publications from any work carried out at the University of Utah (including all authors, articles, title and inclusive page numbers; omit meeting abstracts).

1.

2.

3.

4.

Supervisory Committee appointed?

 no

 yes Date:

Committee Chair 1. unid:

2. unid:

3. unid:

4. unid:

5.

Dissertation title, or one-sentence topic description:

Preliminary Examination:  yes  no Date:

Result: Passed  yes  no

Graduate teaching (TA) done?  yes

 no

Course and date:

Dates of Supervisory Committee meetings:

1.

2.

3.

4.

Brief summary of results or progress since last Supervisory Committee meeting.