Chemistry Department
Portland State University
Revised October 2021

GUIDELINES FOR PH.D. DEGREE
CHEMISTRY

Contents

I. Overview

The Ph.D. degree in Chemistry involves the successful completion of the following requirements:

- Entrance exams
- Course program
- Comprehensive exam
- Research prospectus exam
- Seminar program
- Dissertation research and preparation
- Final dissertation defense

It is the function of this document to delineate these requirements and to define the Chemistry Department's supervisory role. The information given here supplements statements of degree requirements published in the University Bulletin. Additional information may be obtained from the Graduate School and the Chemistry Department office.

II. General Requirements

A. Entrance Exams

Prior to beginning the proposed program, each student will take standardized exams constructed by the American Chemical Society. These entrance exams are given to assess the background of the entering graduate students to assist in better advising the student. There is no pass/fail for these exams. The exams cover five recognized subspecialties of chemistry:

Analytical Chemistry
Biochemistry
Inorganic Chemistry
Organic Chemistry
Physical Chemistry (Quantum, Thermodynamics and Dynamics)

When: At the commencement of the 1st year in residence.

B. Coursework

Students are required to complete a minimum of 24 credits of formal graduate coursework in science. These courses must be at the 500/600 level. The two credits of CH610 (Scientific Communication) count toward the 24 credit requirement. However, course credits such as: seminar, survey of faculty research, and research cannot be applied to the coursework requirement. Additional courses that will not be applicable towards the 24 credit requirement are: CH510 (Glassblowing), CH527 (Instrumental Analysis Lab), CH537 (Spectrometric Analysis Lab), CH544/5 (Physical Chemistry Lab), CH 551 (Materials Lab), CH593 (Biochemistry Lab); students are generally discouraged from taking the laboratory component of graduate courses. The laboratory course CH525, Electronics & Instrumentation Laboratory is the exception to this rule, concurrent enrollment in CH524 and 525 is required. It is expected that the majority of coursework will be completed in the first two years in residence.

Due to the interdisciplinary nature of the departmental research programs, courses from outside chemistry will often be part of a student's curriculum. A maximum of two courses from other

departments may be applied to the 24 credit course requirement, but must be relevant to chemistry and the student's research program. All courses taken outside the chemistry department must be approved in advance by the graduate adviser and the GAAC.

When: Typically by the end of the 2nd year in residence.

C. Transfer Coursework

Some students may have completed graduate level coursework prior to commencement of the PhD program. Some of this coursework may be used to satisfy part of the graduate coursework requirement set out above in II.B. To be eligible to transfer coursework into the PhD program the student must successfully pass their entrance exams before a request for coursework transfer can be made. Only coursework that is relevant to the program of study, has been completed at an accredited institution in the last seven years, taken at the graduate level, and graded B or above can be used to satisfy the graduate coursework requirement of the PhD program. A maximum of two courses (8 credits) can be transferred into the PhD program.

Approval to transfer coursework into the PhD program is a three stage process. The student must provide to their research adviser a syllabus for each course that they would like transferred into the PhD program. The Chemistry Graduate Student Progress Form (CGSP: https://forms.gle/LevUyyb5W4PagMRo8) and the Graduate School form GO21D should be completed by the research adviser who, if they approve of transfer, will then submit the forms and syllabi to the GAAC for review. Submissions to the GAAC received directly from students will not be reviewed. The GAAC will review the request, if approved the form GO21D will then be submitted to the Graduate School for university review.

When: Requests must be received before the student's first year meeting (see section III.E.) but will not be accepted until after the conclusion of Winter term of the student's first year in residence and the successful completion of the Entrance Exam requirement.

D. Comprehensive Examination

Comprehensive exam must be completed in the second year of the doctoral program. The purpose of the exam is two-fold:

- to test the student's knowledge of the specialty area of chemistry represented by their laboratory, including background knowledge
- to test the student's ability to propose a viable program of scientific research in this area.

The comprehensive exam is administered by the Initial Advisory Committee (IAC, Section III.C.).

The comprehensive exam is made up of a written and an oral portion. Both the written and oral portions of the examination test only the student's scientific acumen. A description of the student's research progress and/or preliminary data is/are not permitted in either exam. Research progress forms part of the assessment of the third-year Prospectus Examination (Section II.E.). The written and oral comprehensive exams will be assessed independently – each may be passed without reference to the other. The timing of the written and oral exams is not linked: a no-pass in one exam does not affect the timing of the other.

Both exams should present a research proposal. The only requirement is that both the substantive questions and methodology proposed fall reasonably (but not strictly) within the expertise of the laboratory with which the student is affiliated. There could be complete, large, small, or even no overlap with the envisioned and still-developing dissertation plan. Any questions about whether proposed projects are appropriate should be directed to the chair of the IAC.

Formal Requirements: To pass the comprehensive exam the student must pass both the written and oral components. All prospective doctoral students must register for 2 credits (P/NP) of CH610 Comprehensive Exam in the Fall term of their second year. This course is to assist students in the preparation of their written comprehensive exam and does count towards the coursework requirement of the program (Section II.B.). A pass in CH610 Comprehensive Exam is not equivalent to passing the Written Exam, but merely indicates successful submission of written exam.

Written Exam: Students will prepare a written document, 10 – 12 pages in length, using the

provided template available on the department website (https://www.pdx.edu/chemistry/phdinfo). The written document will be in the form of a research proposal that demonstrates that the student has a strong grounding in their specialty area of chemistry or biochemistry. Particular attention should be paid to the recent research literature in the specialty area, outstanding questions that remain unsolved and clearly defined scientific approach to address a subset of these questions. The adviser should offer general guidance and advice, but not detailed input to, or review of, the Written Proposal.

Evaluation: The Initial Advisory Committee will assess the written exam. The written exam will be evaluated on the basis of:

(i) adherence to these guidelines
(ii) identification and thorough justification of original lines of investigation in the research area
(iii) clear explanation of the suitability of the methodologies chosen to carry out the investigation
(iv) consideration of alternative lines of experimentation or hypotheses to address, and, if needed explanation for why these approaches were not chosen

An evaluation of written exam will be provided in writing to the student by the IAC at the conclusion of the oral examination meeting. A copy of this evaluation will be provided to the Department Manager. In the event that the student does not pass, the written evaluation will include detailed comments on which aspects of the proposal were insufficient. In this event the chair of the IAC will be available to the student for consultation. If the student does not pass the written exam they may retake the exam, in which case the student should address the feedback provided in the evaluation. The student may submit a revised exam to the Department Manager by 5 PM on the Thursday of finals week of Winter term.

When: The written exam must be submitted to the Department Manager by 5 PM on the Thursday of finals week of Fall term of the 2nd year.

Form: Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8

Oral Exam: Students must take the oral exam in the Winter term of their second year. Failure to

take the exam by the Friday of the last week of classes of Winter term will result in the student failing the exam, unless an extension has been approved in advance by the GAAC (Section III.A.).

The format of the oral exam is as follows:

- The IAC will meet with the student's faculty adviser to discuss and the general progress of the student and to comment on the written document (the student is absent for this discussion).
- The faculty advisor will then depart and the student will give a 20 minute oral presentation on their proposal.
- The examining committee will question the student on any aspect of the content of the presentation and written proposal. Questioning may cover anything reasonably related to the proposal to assess the breadth and depth of the student's background knowledge in any area of Chemistry or Biochemistry.

Evaluation: The Initial Advisory Committee will assess the oral exam. The oral exam will be evaluated on the basis of:

(i) the student's ability to demonstrate scientific acumen by explaining the content of the written proposal

(ii) the student's knowledge of background material

(iii) the quality of the presentation.

The IAC will verbally inform the student of the result of both the written and oral exams at the conclusion of the meeting. Written feedback on the oral exam will be provided to the student within 7 calendar days of the exam. A copy of this evaluation will be provided to the Department Manager. In the event that the student does not pass, the written evaluation will include detailed comments on which aspects were insufficient. In this event the chair of the IAC will be available to the student for consultation. If the student does not pass the oral exam they may retake the exam, in which case the student should take on board the feedback provided in the evaluation. The oral exam may be retaken no earlier than 3 months after the first attempt, but before the end of finals week in Spring term.

Form: Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8

To pass the comprehensive exam the student must pass both the written and oral exams. Failure to complete either the written and/or oral exam by the stated deadline(s) will result in a No-Pass. Students who receive a No-Pass on either exam will be dropped from the doctoral program.

When: The oral exam must be taken by the end of the last week of classes of the Winter term of the 2nd year.

Form: Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8

E. Prospectus Examination

The prospectus exam is a combination of written and oral examinations, similar in format to the comprehensive exams, but more narrowly focused on the student's individual research project. The prospectus exam focuses a detailed research plan, based on the student's current research progress, and how this plan will lead directly to the production of a satisfactory Ph.D. dissertation. The prospectus exam must be completed during a student's third year in the program. The purpose of the exam is to ensure the success of students in the Ph.D program, by examining both their research history and future plans.

The prospectus exam cannot be undertaken until a GO-16D form has been submitted to, and approved by, the Graduate School formally forming a DAC (see section III.D.)

Written Exam: The student will prepare a report of their research progress in the program to date and their research plans for the remainder of their time in the program, including how their work will lead them to a successful dissertation. The written report must be provided to each member of the DAC at least 14 days prior to the exam. The report should be about 15-20 pages, concise but also complete. It should provide the following information:

- a clear picture of the background required to the work
- a clear description of the student's research accomplishments to date
- the student's future research plans

The report should briefly and clearly provide a road map of how the student plans to address outstanding research questions in their chosen research area and how this will lead them to a successful Ph.D.

Oral Exam: The oral exam will begin with a presentation (30 – 40 minutes) by the student of their research accomplishments to date and how they see their results transforming into a Ph.D. thesis.

A student may be asked to revise their report and/or research plans the DAC prior to advancing to candidacy.

Once the DAC is satisfied that the student's research is on track, the student will be recommended for advancement to candidacy. Students who have advanced to candidacy are permitted to register for CH603 dissertation credits (see II, E. Department Seminar, below). Research Advisers should ensure that a copy of form GO-23 is available for the DAC at the end of the exam. Students should not handle this form once it has been signed.

When: During the 3rd year in residence

Forms:

http://www.pdx.edu/ogs/sites/www.pdx.edu.ogs/files/GO-23.pdf

Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8)

F. Departmental Seminar

Students must attend the weekly chemistry departmental seminar at 3:15 PM on Friday afternoon. Participation in the departmental seminar is an important part a student's development as a research scientist.

During the 4th year in residence, all students must present a seminar on research progress to their entire department. The purpose of this seminar is to afford the student the experience of presenting to a large audience before they present their dissertation defense, but also the edification of the department as a whole host of the research being undertaken by the student. The student must be sure to enroll for CH607 *Seminar Presentation* in the term in which they are presenting their seminar. Seminar presentations are graded pass/no pass.

When: Mandatory attendance weekly, and presentation during the 4th year in residence

G. Credit Requirements

A total of 81 credit hours at the graduate level are required for a Ph.D. in chemistry. Included in these 81 credits must be:

- A minimum of 24 course credits at the graduate level (500 or 600 level) and a minimum of 6 courses (see II, B. Coursework, above).
- 2 credits of CH510 *TA Prep* in the first fall term.
- 1 credit of CH510 *Survey of Faculty Research* in the first fall term.
- 2 credits of CH610 *Scientific Communication* in the first spring term.
- 1 credit of CH607 *Seminar Presentation* graded in the fourth year.
- A minimum of 27 credits of CH603 *Dissertation* are required. A student may not enroll for CH603 credit prior to advancement to candidacy (completion of the prospectus exam).

The remaining credits will be made up of either: graduate level courses, research (CH601) and/or dissertation (CH603) credits.

H. Dissertation

Upon completion of the approved research plan (see II, D. Prospectus Examination, above) the candidate will prepare a dissertation describing the results of the course of study. The dissertation must be prepared according to the ETD Formatting Requirements, available at https://www.pdx.edu/ogs/electronic-thesis-and-dissertation-etd-formatting-requirements or from the Graduate School. Copies of the dissertation will be presented to members of the DAC at least 2 weeks before the oral exam. Following acceptance of the dissertation by the DAC, the dissertation will be orally presented and defended by the candidate. The examination committee will be the student's Dissertation Advisory Committee (see III. D. Dissertation Advisory Committee, below). In the first part of the defense the student will present a public seminar on the dissertation research. This will be followed by a private oral examination attended by members of the examination committee covering the subject area of the thesis. A dissertation defense has two

possible outcomes: pass and fail. In the event that a student fails the defense, the student may (at the discretion of the DAC) be afforded a second opportunity to defend their dissertation no less than three months after the initial defense exam. For more details see the Portland State University Bulletin under Graduate Programs->Degree Requirements->Doctoral Degree->Dissertation Defense. Students may be asked to make revisions to their dissertation by the DAC even after passing their dissertation defense. Successful completion of the oral examination and the revisions to the dissertation requested by the examination committee will be required for completion of the degree.

Students should take the post-defense revisions to their dissertation seriously. The DAC should provide the student with a clear list of dissertation revisions that should be completed prior to submission of their final dissertation and a time-line for the completion of these revisions. Students should present revisions in such a way that they can be easily tracked by the committee member. Students should also provide each DAC member with sufficient time to review and approve dissertation corrections.

When:

Dissertations should be submitted within 5 years of entering the program. A waiver for no more than one additional year can be requested.

Applications for graduation must be submitted by the 1st Friday of the term in which graduation is requested.

The deadline for holding a dissertation defense is 5 weeks prior to the Friday of finals week of a term.*

The deadline for submitting a final dissertation is 3 weeks prior to the Friday of finals week of a term.* * *the summer term is calculated on the 8 week term schedule*

The deadline for submission of the form GO17 for early term graduation is the Tuesday after finals week of the term prior.

Forms:

Electronic Thesis and Dissertation Formatting Requirements:
https://www.pdx.edu/ogs/electronic-thesis-and-dissertation-etd-formatting-requirements.

Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8)

Doctoral Defense Form (GO-17D):

http://www.pdx.edu/ogs/sites/www.pdx.edu.ogs/files/GO-17D.pdf

Please note: students may not handle the GO-17D once DAC members have signed the form.

Dissertation Signature Page:

http://www.pdx.edu/sites/www.pdx.edu.ogs/files/ETD%20Doc%20Sig%20Page.pdf

III. Student Advising

At the time of entry into the Ph.D. program the Graduate Admission and Advisory Committee (GAAC) are responsible for advising the graduate student and are the resource to which any graduate student problems should be taken first.

After selection of the Research Adviser the primary responsibility for the student's progress will pass from the GAAC to the Research Adviser. The Research Adviser has the major responsibility for monitoring the progress of the student, even in cases where the research is performed in collaboration with another laboratory. The Research Adviser will provide advice on and preliminary approval of the program of study.

At the same time the research advisor is selected an initial advisory committee (IAC) will be appointed for each student. The primary purpose of this committee is to examine the student's comprehensive exam, this committee will also assist the adviser in monitoring the student's progress.

Once a student has completed their comprehensive exams they must form a Dissertation Advisory Committee (DAC) which replaces the IAC and continues to serve in an advisory capacity to the graduate student. It is the Research Advisor's responsibility to schedule meetings with the Initial Advisory Committee and the Dissertation Advisory Committee, including the Prospectus and Final Oral Examinations and to submit the Annual Summary Reports to the Department Chair. These reports become part of the student's permanent file.

One of the important roles played by each of these advisory committees is to be a first resource for students when they are uncomfortable discussing issues with their adviser. Students seeking support are encouraged to reach out to either their entire committee or individual members with whom they feel comfortable. The committee and/or its members will work to assist the student, but may need to reach out to others in order to help.

A. Graduate Admissions and Advising Committee (GAAC)

Upon entry into the Ph.D. program students are initially advised by the Graduate Admissions and

Advising Committee (GAAC). In order to facilitate the advising process, all new graduate students are required to take Graduate Entrance Exams (see II, A. Entrance Exams, above) prior to enrollment in a course program. Once the examination results are known, each new student will meet with the GAAC to discuss a course program for the coming academic year. The GAAC will continue to oversee the student's progress and be available for informal advising until such time as a Research Adviser is selected. The student may contact the GAAC with any advising questions throughout their time in the program.

B. Research Adviser

Each doctoral student must begin discussion of potential research projects with faculty members during their **FIRST TERM** and most will have selected a Research Adviser before the end of this term. The procedure for adviser selection is as follows.

- The student will register for CH610 *Survey of Faculty Research* in the fall term of their admission. Each faculty member will give a short presentation of the research interests.
- The student will select three advisers in which they will undertake a short (2 week) rotation. These choices will be indicted on the Research Shadow /Rotation Selection (RSRS) form https://forms.gle/tVjQuzjwNVh5bd4XA.
- Students may additionally discuss fields of interest and potential research projects with as many other faculty members as they wish.
- The student will obtain the signature of each faculty member with whom they rotate or discuss potential research projects on the Selection of Research Adviser Form (Form CH-10: http://www.pdx.edu/chem/sites/www.pdx.edu.chem/files/Research%20Advisor%20Selection.pdf) . Only faculty who have signed the Selection of Research Adviser Form may be selected as a potential adviser.
- The student ranks the top **three** preferences for adviser (1 = first choice, 2 = second choice…)
- The GAAC will review all students' adviser choices.

- The GAAC and department chair will determine whether the faculty member preferred by the student is willing to accept the student. If not, then the GAAC and department chair will move on to the student's next preference.

In the event that a student is not paired with an adviser during this process, the department chair will assist the student in making another suitable selection. Students are required to place with a research adviser by the end of the third academic quarter of their first year in residence; failure to do so will result in cancellation of admission to the program.

Students are required to have a research adviser throughout their time in the program. If at any point after the first term a student is does not have a research adviser, for any reason, the student will be permitted three academic quarters to find a new research adviser. Failure to place with a new research adviser within three academic quarters will result in their admission to the program being cancelled.

When: Typically during the first term in the program, or by the end of the third academic quarter of the student's first year in residence at the very latest.

C. Initial Advisory Committee (IAC)

The IAC will advise and examine a student's progress through first terms of the program. The purpose of this committee is to provide a panel of experts in the subspecialty of the adviser to assist in monitoring the student's progress and examine the student's comprehensive exam. This committee will be appointed by the GAAC at the time of adviser selection. This committee should meet with the student at least twice: once close to the end of the 1st year and once in the 2nd year to examine the comprehensive exam. This committee, like the DAC (see below), is intended as a first resort for students and advisers seeking advice with regard to their research progress. That notwithstanding, the GAAC is always available as an advising resource to students throughout their time in the program.

D. Dissertation Advisory Committee (DAC)

The DAC will advise and examine a student's progress through the program from completion of

the comprehensive exam to final defense. As soon as a student has passed their comprehensive exam the process of forming their DAC should be completed. Students should work closely with their research adviser to select committee members. Final responsibility for forming a committee lies with the research adviser. It is advisable to have a committee that will understand the technical aspects of your research and provide constructive comments that will help improve the quality of the research. The DAC may vary in size from four to six faculty members. Students should keep in mind that more committee members can make scheduling meetings more difficult. The DAC is comprised of:

- The student's research adviser; the adviser serves as chair of the DAC.
- At least three tenured or tenure-track faculty members from within the chemistry department at Portland State University (including the adviser).

The DAC may be augmented with faculty members from outside the department to increase relevant expertise on the DAC. This should be discussed with the research adviser before proceeding. All members of the DAC must hold doctoral degrees. The Graduate School will require *curriculum vitae* for any faculty members from outside Portland State University. University approval of the DAC is required prior to the prospectus exam which must be completed in the student's third year.

The DAC plays an oversight role, ensuring adequate student progress. The DAC will conduct an annual review of the student's progress, based on a meeting with the student. Additional meetings may be scheduled at the discretion of the student, Research Adviser, Department Chair, or any member of the DAC, but must be at least once per academic year. The DAC is also responsible for final approval of the research prospectus / recommendation for Advancement to Candidacy and the Dissertation. In addition, the DAC administers the candidate's oral prospectus exam, presentation of Independent Research Proposal, and final oral exam. Note: the Dissertation Advisory Committee fulfills the roles of both the Advisory Committee and the Dissertation Committee (specified in the University Bulletin) for Ph.D. students in Chemistry.

When: The DAC should be formed soon after the comprehensive exams have been passed, no later than the end of 2nd year in residence year.

Form: Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8

E. Committee Meetings

Students must meet with their advisory committee a minimum of once per academic year. This is to ensure that the student is continuing to make satisfactory academic progress. The schedule for meetings should be as follows:

Year	Purpose	Committee
1	Assess progress	IAC
2	Comprehensive exam	IAC
3	Prospectus exam	DAC
4	Assess progress	DAC
5	Dissertation defense	DAC

For committee meetings that are not formal examinations (*i.e.* not comprehensive exams, proposal or dissertation defenses), students need only prepare slides to present their results and future plans much as they might be expected to do for a research group meeting. No written document is required unless requested by the committee. Students may meet with their committee as frequently as needed, however, one meeting in each academic year must be designated *in advance* as the "annual committee meeting". In that meeting, if the student's academic progress is deemed unsatisfactory, the student will be informed in writing and required to hold a second meeting with their full committee in the following academic term. If academic progress at the subsequent meeting is again deemed unsatisfactory, the student will be dismissed from the program.

When: The annual committee meeting in the first year must occur before the end of Spring term of the student's first year in residence.

Form: Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8

IV. Status in Program

A. Advancement to Candidacy

A student is nominated for advancement to candidacy by the student's approved Dissertation Advisory Committee with the approval of the Department Chair after the student has satisfactorily completed the entrance exams, all coursework, the comprehensive exam, and the oral prospectus exam. This should occur no later than the end of the 3rd year of a student's degree program. The nomination is made on form GO-23. The student will be informed by the Dean of Graduate Studies of advancement to candidacy. Note that currently (September, 2019), students who are advanced to candidacy will receive a higher GA stipend for either teaching assistant (TA) or research assistant (RA) duties.

Form: Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8

B. Maintenance of Enrollment in Program

Students must maintain a minimum 3.0 cumulative graduate-level grade point average (GPA) and be enrolled for credit each term of the academic year (unless the student has obtained a leave of absence). After completion of 9 *graded* credit hours, if a student's cumulative graduate GPA falls below 3.0, the Graduate School will place the student on ACADEMIC PROBATION. ACADEMIC PROBATION means that the student is not eligible to hold a graduate assistantship, have a dissertation committee appointed (*i.e.* have a GO-16D approved), or advance to candidacy. The student has until the completion of a further 9 graded credit hours to raise their cumulative graduate GPA back to 3.0 or above. A student on ACADEMIC PROBATION who fails to raise their cumulative graduate GPA to 3.0 within 9 graded credit hours OR allows their cumulative graduate GPA to fall below 3.0 a second time will have their admission to the program cancelled.

Students must be registered every term (Fall, Winter and Spring) during the academic year (minimum 1 credit) while working on any phase of the dissertation (research, writing, and revision). Students must also register in Summer term (minimum 1 credit) if the student is going to complete a milestone in that term: *i.e.* comprehensive exam, prospectus exam, dissertation

defense. After advancement to candidacy students must be continuously registered for a minimum of 1 graduate credit per term (excluding Summer) through to graduation.

Additionally, students must continually make satisfactory academic progress towards their Ph.D. Progress will be judged on an annual basis by the relevant advisory committee at meetings held with the student. In the student's second and third years, academic progress will be assessed through the comprehensive and proposal exams, respectively. The student's academic progress will be graded either "satisfactory" or "unsatisfactory" and recorded on the Chemistry Graduate Student Progress Form. This form will be completed at the conclusion of every committee meeting. The student will be provided with a copy of this form which will contain specific feedback for the student, including areas of concern. In cases where a student's academic progress has been deemed unsatisfactory by the committee the Chemistry Graduate Student Progress Form will include specific items that need to be addressed by the student prior to the next committee meeting. Unsatisfactory academic progress will result in a second meeting of the student with the relevant committee in the following term. During this meeting the student is afforded an opportunity to respond to the committee's feedback but should address all feedback provided in the Chemistry Graduate Student Progress Form and demonstrate adequate academic progress. If academic progress is still deemed unsatisfactory as determined by the advisory committee, the student's admission to the program will be cancelled after departmental review. In some cases, students dismissed from the Ph.D. program will be granted admission to either the M.S. or M.A. programs. A copy of this recommendation will be transmitted to the student.

Form: Chemistry Graduate Student Progress Form: https://forms.gle/LevUyyb5W4PagMRo8

C. Maintenance of Graduate Assistantship

To be eligible of a graduate assistantship a graduate students must be in good academic standing and have made satisfactory good academic progress over the past year. Academic progress is determined on an annual basis at the student's annual meeting (see above). The student must have their academic progress assessed by their committee each academic year that they are in the program in order to maintain eligibility for a graduate assistantship. Failure to hold an annual committee meeting will result in the loss of eligibility to hold a graduate assistantship. Students

on academic probation are ineligible to hold a graduate assistantship, either TA or RA. To be eligible to for a graduate assistantship, students must also enroll in and successfully complete 9 graduate level credits each term. A student may register for more than 9 credits but the tuition remission granted by the department covers only 9 credits and the student will need to pay the extra tuition costs out-of-pocket. Course audits are not counted as credits. Graduate assistants are expected to devote full time to their studies, teaching, and research duties. Students may not hold any outside employment while on assistantships (RA or TA) without expressed consent of the Department Chair and the GAAC. This consent must be obtained by the Research Adviser on the student's behalf. In addition, students expecting a graduate assistantship in the form of a TA must perform teaching duties satisfactorily each term in order to qualify for reappointment by the Department Chair. Ph.D. students in good standing will only be supported on teaching assistantships for a maximum of twenty (20) terms. A special *one term* extension may be granted by the GAAC and the Department Chair following petition by the Research Adviser on the student's behalf. Failure to adequately perform teaching and/or other duties as a TA may lead to the loss of a graduate assistantship unless research funds for RA are available from the research adviser.

D. Residency Requirement

Students must meet the university's residency requirements, which may be found here: http://pdx.smartcatalogiq.com/en/2015-2016/Bulletin/Graduate-Studies/Degree-requirements/Doctoral-Degree/Residency-requirement. Most commonly this is achieved by at least three consecutive terms in full-time (at 9 credits per term) residence at Portland State University after admission to the doctoral degree program. A minimum of three years in graduate study is also required. The student must complete 27 credits of dissertation research under CH 603 after advancement to candidacy.

E. Leave of Absence

Under special circumstances, including parental leave, requests for a leave of absence of up to one year may be approved by the Department Chair in consultation with the student's Research Adviser or the Graduate Admissions and Advising Committee. Such applications must be filed with the

Graduate School no later than the last day to register for classes in the term in which the request is made. No more than two leaves of absence will be approved. Only students in good academic standing can be granted a leave of absence. Leaves of absence are included in all university time limits for progress through the Ph.D. program, *i.e.* they do not stop clocks.

F. Withdrawal / Change to the M.S. Program

Any student who ceases to be enrolled for more than one academic term without formal leave of absence will be assumed to have withdrawn from the degree program and have their admission to the program cancelled by the Chemistry Department. The student may be readmitted only with the consent of the Graduate Admissions and Advising Committee. This provision does not include the summer term.

Students wishing to change to the M.S. degree program should file an M.S. degree program admission application with the Graduate Admissions and Advising Committee and consult with the GAAC or Department Chair. The two-year (8-term) time limit for assistantship support for the M.S. degree would also include any time spent on support in the Ph.D. program.

Form: https://www.pdx.edu/gradschool/forms

Ph.D. students have the option of preparing and defending an M.S. thesis during the progress toward their Ph.D. dissertation, with the Research Adviser's consent, however the student must inform the GAAC of this intention by the time of their first taking of the Ph.D. comprehensive exam. Attainment of a M.S. degree concomitant with the Ph.D. requires the following:

- Completion of the 24 credit formal course requirement (these same courses can also be used for the Ph.D. requirements)
- Completion of a literature-based seminar (this is *distinct* from the research-based seminar required for the Ph.D.)
- Formation of a Thesis Advisory Committee (similar to the DAC, but without a GS representative: even if it is the same as the DAC, a GO-16M is required)
- Completion of research that is formally distinct from that used for the Ph.D.
- Preparation of a properly formatted and approved M.S. thesis

- Oral defense of this research work
- 6 credit of CH503 in the term of their M.S. thesis defense, which must be completed successfully by the end of the Winter term of their third year.

The concomitant attainment of an M.A. degree while pursuing a Ph.D. degree is not allowed.

Forms: http://www.pdx.edu/sites/www.pdx.edu.ogs/files/go-16m.pdf
http://www.pdx.edu/ogs/sites/www.pdx.edu.ogs/files/GO-17M.pdf
http://www.pdx.edu/sites/www.pdx.edu.ogs/files/ETD%20Mast%20Sig%20Page.pdf

G. Completion of Program

The awarding of a degree during a specific term involves the following steps, which must be met by certain deadlines.

- Apply for gradation by the term deadline (https://www.pdx.edu/ogs/application-for-awarding-of-masters-degree-doctoral-degree-or-graduate-certificate).
- Submission of the completed dissertation to the DAC at least two weeks prior to the defense.
- Passing the dissertation defense before the deadline for the term deadline.
- Completing all revisions to the satisfaction of the DAC prior to the term deadline.
- Ensuring that you have met all Ph.D. degree requirements.
- Complete the Electronic Dissertation formatting and submission process.

Exact due dates are posted by the Graduate School but it is advisable for the student to finish the requirements well ahead of the deadline to allow leeway for unexpected delays. All forms should be turned in to the Chemistry Department Office for routing to the Graduate School by the posted deadlines. Any Incomplete or In Progress grades (except CH603) must be removed no later than two weeks before graduation.

V. APPENDIX A

A. Summary of Responsibilities

The following summary of responsibilities of the various people and entities involved in the Ph.D. program in Chemistry is intended to serve as a quick reference guide and may not be considered all-inclusive or binding. It is still contingent upon the student and adviser to acquaint themselves with the particulars of their duties.

Student's Responsibilities:

It is the student's responsibility to acquaint themselves with all of the requirements associated with the various levels of governance (University, Chemistry Department) of their graduate program. This document along with the University Bulletin should be considered the primary source of information. Additional information, including answers to specific questions and term specific deadlines, can be obtained from the Chemistry Department and the Graduate School.

Specific responsibilities include: 1) Preparation for and successful completion of all of the requirements listed above. 2) An initial individual literature search of material applicable to the proposed research and 3) An ongoing familiarity with recent developments in the field. 4) Competent independent execution of the research project. 5) Preparation and presentation of the dissertation.

Research Adviser's Responsibilities:

1) Primary advising of the student in terms of both the course of study and the research project. The research adviser should thus be aware of the coursework requirements of the degree program.

2) Advising and assisting in the preparation of the Comprehensive Exam, Research Prospectus, Research Seminar and the Dissertation. Scheduling of the latter three exams.

3) Selecting the Dissertation Advisory Committee.

4) Filing Annual Summary reports and Graduate School forms (especially GO-16D and GO-17D.)

Initial Advisory Committee (IAC) Responsibilities:

1) Oversee the student's academic progress in the degree program.
2) Provide an advising resource for students
3) Provide advice regarding the preparation of the comprehensive exam.
4) Provide final approval of the student's course of study and comprehensive exam.
5) Administer the oral research comprehensive exam.
6) Filing Annual Summary reports

Dissertation Advisory Committee (DAC) Responsibilities:

1) Oversee the student's academic progress in the Ph.D. program.
2) Provide an advising resource for students
3) Provide advice regarding the preparation of the research prospectus and dissertation.
4) Provide final approval of the student's course of study, research prospectus and dissertation.
5) Administer the oral research prospectus exam and dissertation defense.

B. Project Timeline Summary

The following is the expected 5-year Ph.D. degree program

- Fall term, year 1:
  - Entrance exams
  - Formal coursework (1 or 2 classes)
  - Survey of Faculty Research and advisor selection
  - TA training
  - TAing
- Winter term, year 1:
  - Formal coursework (1 or 2 classes)
  - Lab work

    - TAing
- Spring term, year 1:
    - Formal coursework (1 class)
    - Lab work
    - TAing, if appropriate
    - Seminar/proposal prep class (2 credits)

- Fall term, year 2:
    - Formal coursework (1 class)
    - Lab work
    - Preparation of document for written Comprehensive examination
- Winter term, year 2:
    - Formal coursework (if needed)
    - Lab work
    - Oral Comprehensive exam, or start written research proposal
- Spring term, year 2:
    - Formal coursework (if needed)
    - Lab work
    - Oral/Written Comprehensive exam
    - Prospectus exam, for students who have passed comprehensive exams

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- Fall term, year 3:
    - Lab work
    - Prospectus exam, for students who have passed comprehensive exams
    - Re-take of comprehensive exam(s), if needed
- Winter term, year 3:
    - Lab work
    - Prospectus exam, for students who have passed comprehensive exams (should be done before the end of their third year at the latest).
- Spring term, year 3:
    - Lab work
    - Prospectus exam, if needed (should be done before the end of their third year at the latest).

- Fall term, year 4:
    - Lab work
- Winter term, year 4:
    - Lab work
- Spring term, year 4:

- Lab work
- Departmental seminar on research

- Fall term, year 5:
  - Lab work
- Winter term, year 5:
  - Lab work and thesis writing
- Spring term, year 5:
  - Thesis writing
  - Ph.D. defense