REQUIREMENTS AND DEPARTMENTAL POLICIES FOR GRADUATE STUDENTS IN CHEMISTRY
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Program Requirements for the Ph.D. Degree

Admission:

- A bachelor's degree with a superior undergraduate record, a Graduate Record Examination (GRE) Aptitude test and letters of recommendation are required.

Course Requirements:

- Candidates must complete a minimum of 6 Graduate courses (500 level or above recognized within the Chemistry Department), 24 units, with B- or better grades and overall GPA of 3.0 or better on all work. Some of these requirements can be met on the basis of graduate courses taken prior to entry into the USC graduate program. A minimum of 60 units are required to complete the Ph.D. degree. These units are made up of a minimum of 24 units of course work, a minimum of 4 units of Chemistry 794 a, b, c, ...z (dissertation) and the remaining units will consist of Chemistry 790 (research). All courses are subject to the approval of the Research Advisor, or, in the first and sometimes the second semester, the Graduate Studies Committee (GSC), or a subcommittee of the GSC. Courses outside the department must be 400 level or above, but still require the approval of the Research Advisor.

Advising:

- Initial academic advising is handled by the GSC via appointed advisors. You will continue to consult with this advisor each semester until you have selected a research advisor and joined a research group. Your research advisor will supervise your thesis research.

Selecting a Research Advisor:

- You are encouraged to become familiar with research activities of all faculty in your area of interest. Faculty seminars are held to aid this process. You may attend group meetings and carry out research in a particular group, but cannot formally join a research group until the end of the first semester when you have completed at least two courses with a grade of B- or better and have interviewed at least four professors in your area of interest. After these requirements are met you may formally sign up with a Research Advisor; the form is available in the Chemistry Department Office.

English Language Proficiency:

- Those students required to take English classes, are also required to meet with the GSC after the first semester, and subsequent semesters at the GSC's request, to demonstrate proficiency of the English language prior to being allowed to take the Screening Procedure. Proficiency in English is essential to successfully obtaining a Ph.D. degree at this university.
Screening Procedures/ Ph.D. Guidance Committee:

- By the end of the second year of study, a Ph.D. Guidance Committee is assembled. This committee consists of five members: your Research Advisor, three other chemistry professors (one from outside your area of research specialization) and one professor from a department outside Chemistry. All committee members must be approved by the Graduate School. The committee evaluates your course work in a "Screening Procedure" for depth, breadth and performance and evaluates your research progress and intellectual development from an oral presentation and defense of your research project. Upon evaluation of your progress, the committee will recommend that the "Report on the Screening Procedure" and "Request to take the Qualifying Examination" forms be signed by your Research Advisor, the department Chairman and your Guidance Committee, as required.

Oral Qualifying Examination:

- This examination is based on (1) two research proposals which should represent independent ideas and should offer the Guidance Committee the opportunity to judge your ability to think creatively and to formulate significant ideas for research outside of your ongoing research project, and (2) written answers and oral defense of three questions. These are prepared by the Guidance Committee and given to you two weeks before the date of the Qualifying Examination, when you hand in your proposals. You have one week to prepare the written answers. The Qualifying Examination should be attempted by the end of the first semester of your third year. Failure to comply with this time schedule may result in your disqualification from the Ph.D. program. The Committee's decision to advance you to candidacy, to allow you to repeat the oral, or to disqualify you will be based on the quality of the written proposals, the adequacy of the oral presentation, your overall record at USC as reflected in course work and examinations, and your research ability and productivity.

Advancement to Candidacy:

- When a satisfactory report on the completion of the Qualifying Examination is submitted, you will be eligible for formal advancement to candidacy for the Ph.D.

Dissertation and Final Oral Examination:

- You are required to prepare a dissertation based on independent, original research conducted under the supervision of your research advisor and dissertation committee, and in accordance with the guidelines of the Graduate School's Ph.D. dissertation requirements. The final oral examination is conducted by the Dissertation Committee, comprised of your Research Advisor, one other chemistry professor and the "outside member" of your Guidance Committee.

Teaching Experience:

- A minimum of one year of supervised teaching experience is required.
Research Seminars:

- Before the completion of the Ph.D. degree, you are required to present your research within one of the divisional seminar programs.

Attending Divisional Seminars:

- It is a requirement of the Ph.D. degree that you attend one of the regularly scheduled divisional seminar programs (Physical/Theoretical, Inorganic/Biological, or Organic/Materials).

Time-to-Degree:

- From admission to completion of courses, one and a half years; from admission to completion of Qualifying Examination and advancement to candidacy, two to two and a half years; from admission to the award of degree, four to five years.
Typical Time Line

As an aid to help clarify the previous information, we have constructed a typical time line for Ph.D. Degree.

**First Semester Year One:**

*Required:*
- Interviews with at least four faculty members.
- Attendance of introductory faculty research seminars.

*Recommended:*
- Successful completion of at least two courses with at least B- grades and a Grade Point Average (GPA) of 3.0 or better.

**Second Semester Year One:**

*Required:*
- Complete "Selection of Research Advisor" form (obtained from main departmental office).

*Recommended:*
- Complete at least four courses with grades of B- or better and GPA of 3.0 or better.

*Transferring Credits:*
Apply for a credit evaluation by going to Degree Progress and asking for one. This must be done prior to the Screening Procedure. Transferring credits is done through the Screening Procedure, so the necessary form is the "Screening Procedure" form. You may obtain this form from the Chemistry Graduate Studies Coordinator. You will need to meet with your Advisor and your Guidance Committee in order to get permission to transfer credits. Next, get the initials of the professor who teaches the equivalent course at USC. They should initial next to the place where the transferred course is designated. Filing of this form is done after passing the Screening Procedure.

**First Summer Year One:**

*Recommended:*
- Full Time immersion into research.

**First Semester Year Two:**

*Recommended:*
- Select Ph.D. Guidance Committee, five members: (1) Your Research Advisor, (3) Professors from the Chemistry Department (One Professor should be from a discipline different from your Research Advisor's), and (1) Professor from a department other than Chemistry. The Guidance Committee will also decide whether to sign the "Request to Take the Qualifying Examination" form.

- Complete course work, six courses with grades of B- or better and a GPA of 3.0 or better.
Second Semester
Year Two:

Required:
Complete course work, six courses with grades B- or better and a GPA of 3.0 or better.

Recommended:
Screening Procedure: Meet with Guidance Committee to present your research project, progress to date, etc. The Guidance Committee will evaluate your progress in research and course work, make recommendations and decide whether to authorize the Research Advisor and the Department Chairman to sign off on the "Report of Ph.D. Screening Procedure" form, and the "Permission to Take the Qualifying Examination" form. You must bring these forms to this meeting. Give completed forms to the Chemistry Graduate Studies Coordinator, who will obtain the Department Chairman's signature and the proper signatures from the Graduate School. You should also complete a degree check card, so Degree Progress can assess your records and make sure your records are accurate.

Please note: you may go through the "Screening Procedure any time after you have completed your course requirements. Students who are transferring credits may be allowed to do this any time after their first two semesters. In any case, it must be completed in time to allow the completion of the Qualifying Examination, which must be done before the end of the First Semester of the Third Year.

Summer
Year Two:

Required:
Full Time immersion into research.

Recommended:
Preparation for the Qualifying Examination.

First Semester
Year Three:

Required:
Schedule your Ph.D. Qualifying Examination.

Take your Qualifying Examination. Turn in a completed "Report on the Ph.D. Qualifying Examination" form. This form can only be obtained from the Chemistry Graduate Studies Coordinator and is only released after the successful completion of the Screening Procedure, and the proper forms have been filed afterwards. You MUST attempt the Ph.D. Qualifying Examination before the end of this semester.

Recommended:
After the successful completion of the Qualifying Examination, you should select a Dissertation Committee of three members: (1) Your Research Advisor, (2) Another professor of Chemistry and (3) your "Outside" member of your Guidance Committee.
After Completion of Research:

From this point onwards, you should concentrate on completing your research. You must always be registered for 794 (dissertation units) and, as needed, 790 (research).

Pick up Ph.D. Oral Defense Packet from the Graduate School. This should answer your questions about completing the degree and dissertation. Very important: You should fill out a second degree check card, so Degree Progress can assess your records and tell you if anything is missing. You may also be required to fill out a "Request for Change of Committee" form. Normally, we do not designate the members of the Dissertation Committee at the time of the successful completion of the Qualifying Examination. The Graduate School reserves the right to approve all Committees prior to Oral Defense. Their approval of your Dissertation Committee is required, and that approval may come with their signatures on this form.

Other Requirements:

Present Research Seminar to department, usually within the context of the divisional seminar programs.

Teaching Experience, at least two semesters.

Credits: There is a residency requirement for the Qualifying Examination of 24 graduate level units. For students wanting to take the Qualifying Examination before taking 24 graduate level units, they may obtain permission to do so if they have the support of the Research Advisor and Guidance Committee, and must fill out a General Petition form and submit it to the Graduate School to have this requirement waived. The Ph.D. degree has a requirement of at least 60 graduate level units, 24 of which should be non-research (course work) and 4 of which must be dissertation units. The rest of the units can be made up of 790 (research). A portion of the 60 graduate level units may come in the form of transfer credits some of which may replace a portion of the course work requirement. As with all courses, these exceptions must be approved by the Research Advisor and the Guidance Committee. You are still required to have at least 4 units of 794 (dissertation).

Reminder:
Passing milestones toward your Ph.D. is effective only if you communicate this information to the Department and the Graduate School. The passing of the Screening Procedure, the Qualifying Examination or the successful defense of your Ph.D. Thesis, are only official when the proper forms are filed with the Graduate School. Please note the required forms page. All forms can be obtained from the Chemistry Graduate Studies Coordinator with the exception of the Ph.D. Oral Defense Packet, which can only be obtained from the Graduate School.
Forms and their proper order:

After completion of 2 courses:
- Selection of the Research Advisor
- Credit Evaluation (for transferred courses only)

After completion of all course work:
- Report on the Screening Procedure
- Request to take Ph.D. Qualifying Examination
- Degree Check Card

After the completion of Screening Procedure before the end of the first semester of the third year:
- Report on the Ph.D. Qualifying Examination

After completion of research and dissertation:
- Ph.D. Oral Defense Package
- Degree Check Card (Filled out for a second time)
- Triple Cards
- Completed Thesis
- Signed Thesis Cover Page
Requirements and Departmental Policies for the Ph.D. Degree

The requirements for the Ph.D. in Chemistry are presented here in a more detailed manner than is possible in the Bulletin of the Graduate School. Within the framework of these requirements, an individual plan for each student is arranged by consultation with the appropriate faculty committee. It must be stressed that this information supplements but does not replace the Graduate Bulletin, and that all the requirements in the latter must be fulfilled.

The student, while progressing towards the Ph.D. degree, is asked to demonstrate three successive kinds of ability. These are:

- The ability to use undergraduate chemistry in a comprehensive rather than piecemeal fashion.
- The ability to advance formal training in areas related to the student's special interests in research.
- The ability to think critically and creatively and to engage in the search for more knowledge.

The student is expected to do well in graduate course work. Most importantly, aptitude and preparation for independent scholarship and research are appraised via informal conference with a faculty committee followed by the Qualifying Examination. Satisfaction of requirements as to residence and number of courses is necessary, although secondary to the above objectives.

Prospective Ph.D. candidates should note the special program leading to a Ph.D. with emphasis on Chemical Physics. There is for this program the added option of presenting a baccalaureate degree in any of the pertinent physical sciences or areas of engineering or in mathematics.

New students will consult with a member of the Graduate Student Committee (GSC) who will act as their advisor until they have commenced research. The initial advisement for all entering students is conducted by the GSC as a whole, or by a subcommittee thereof.
I. Procedures and Requirements during the First Year for New Graduate Students

I. 1 Only the Graduate Student Committee (GSC) is authorized to approve the student's program until such time as a Research Advisor has been formally selected. A student may not register for 790 (research) until first semester requirements are satisfied. Such a committee may not be appointed until the student is eligible to register for Chemistry 790 (research).

I. 2 Well prepared students are encouraged to take three non-research graduate level courses during their first semester, and all students must complete at least two non-research graduate level courses that carry graduate credit in their first semester unless explicitly advised to take make-up work by the GSC. Students who must undertake such make-up work, and consequently are unable to complete at least two courses in the Chemistry Department carrying graduate credit during the first semester, will not be able to register for Chemistry 790 earlier than the end of their second semester in graduate school, although they are entirely free to explore mutual research interests with any faculty member in whose work they may become interested.

I. 3 Programs for the second semester of graduate work will be determined in conference between the student and either the prospective Research Advisor or the appropriate subcommittee of the GSC. Students who have grades of B- or better in at least two courses, and a 3.0 GPA, may use Chemistry 790 as one of the two courses carrying graduate credit required for their second semester registration. Those who registered for at least two graduate level courses in the Chemistry Department during the first semester, but did not achieve grades of B- or better and a 3.0 GPA, must register for at least two further non-research graduate level courses in the Chemistry Department during the second semester.

I. 4 Students are not eligible for registration in Chemistry 790, or appointment of a Ph.D. Guidance Committee, until such time as they have completed at least two graduate level courses in the Department of Chemistry in a single semester with grades of B- or better and an overall average of 3.0 or better.

I. 5 Irrespective of eligibility to register for Chemistry 790, all students seeking a Ph.D. degree are required to make arrangements not later than the second semester with a member of the faculty who will become their Research Advisor and/or Chairman of their Guidance Committee when such a committee can be appointed.

I. 6 All students are required to complete a minimum of four courses in the Chemistry Department during their first two semesters of graduate work. Dropping a course—except for serious illness or other grave emergency—is treated as the equivalent of receiving an unsatisfactory grade in it (C or lower). Students whose GPA is less than 3.0 at the end of the first two semesters are disqualified as degree candidates upon recommendation by the GSC and approval of the Chemistry faculty voting as a committee of the whole, unless very special circumstances warrant an exception.

I. 7 Students who complete these initial requirements satisfactorily, and for whom the Ph.D. Research Advisor has been appointed, are thereafter under the jurisdiction of their Research Advisor who serves as the Chairman of the Guidance Committee (except at the Ph.D. Qualifying Examination, when another member of the Committee must chair). It then becomes the responsibility of the student and the Research Advisor to see that the remaining departmental and graduate school requirements, as detailed in the departmental Brochure and the Bulletin of the Graduate School, are satisfied.
I. 8 By way of clarification of the Bulletin statement of course and scholarship requirements for the Ph.D. candidates, the following synopsis may be helpful. The Departmental requirement is presentation of a minimum of six non-research graduate level courses (24 units) with grades of B- or better and an over-all GPA better than 3.0. The Graduate School requirement is for a 3.00 grade point average on all non-research courses taken.

The Ph.D. Committee may require registration in additional non-research courses beyond the six-course minimum where appropriate. For example, a course outside of a student's area of research (physical, organic, inorganic, etc.) may be required to demonstrate breadth of formal training.
II. Requirements and Departmental Policies Concerning Candidates for the Ph.D. Degree

II. 1 Guidance and Research Advising

- The student is strongly advised to consult with all of the members of the faculty whose fields of research are of possible interest before choosing a research topic. Normally, the student is free to follow personal preferences in choosing a Research Advisor, subject to acceptance by that faculty member.

- After selection of a Research Advisor in accordance with the procedure described above (see Section I. 5 of this Appendix), a Guidance Committee is formed by the student, in consultation with the Research Advisor and with the approval of the Department Chairman. The Committee consists of five members. One of the members must be from a different field of chemistry than that of the Research Advisor, and one must be a tenured faculty member from a department other than Chemistry. The Research Advisor is Chairman of the Guidance Committee.

- The Guidance Committee has the responsibility of approving the student's program of studies and research, and of administering the Screening Procedure and the Qualifying Examination. Immediate supervision and planning of the student's program is normally carried out by the Research Advisor.

- The Guidance Committee will meet with the student and discuss the progress in research and related matters, with the object of evaluating the student's creative ability, critical facility, ability to express ideas, and overall actual accomplishment. The Research Advisor typically expects the students to present an up-to-date C.V. and may require that the student present to the Guidance Committee a written and/or oral report detailing the research progress to that point. After each such meeting, the candidate is informed of the opinion of the Committee with respect to progression towards the Ph.D. degree, and the recommendations of the Committee become a part of the student's department record, although they do not appear on the official University transcript.

- These meetings will not be held during recesses or vacations, nor, except by unanimous consent of all involved, during the Summer Sessions. It is expected that the student will notify the members of the Guidance Committee of the time, place and subject of any seminars that the student may give.

II. 2 Course Requirements

- The minimum course requirement is six graduate level courses (24 units), exclusive of research. These courses must be 500 level or higher for courses offered by the Chemistry Department. All courses must be approved by the Graduate Studies Committee or the Research Advisor. The University requirement by the Graduate School for the Ph.D. is a minimum of fifteen courses (60 units) including research. At least four non-research courses must be in the Department of Chemistry. The six (or more) non-research courses offered must each be completed with a grade of B- or better; the average for all work attempted must be greater than 3.0. However, mere attainment of these minimum requirements should not be regarded as satisfactory progress for a Ph.D. candidate.
The specific group of courses needed to meet the breadth and depth requirement of each candidate is planned at first in conference with advisors from the GSC and subsequently with the Research Advisor, subject to ultimate approval of the Guidance Committee, which may, at its own discretion, make requirements above these stated minima. Furthermore, irrespective of the amount of work taken elsewhere, the GSC or the Guidance Committee may require additional coursework here. Meeting a sufficiency of breadth and depth in courses is ultimately evaluated by the Guidance Committee.

Weekly seminars are organized in various subject areas. All students are required to attend the seminar program appropriate to their general area of research interest. The department also holds Departmental Seminars, speakers for which are drawn from all fields of chemistry. All students are required to attend this important departmental function, a part of their continuing development and education in current research in all fields of chemistry.

II. 3 Transfer Requirements

- The number of graduate level units that can be transferred from other institutions is determined on an individual basis by the Graduate School in consultation with the office of Admissions. The particular courses that can be transferred are determined in consultation with the Guidance Committee. This must also be approved by the Graduate School.

- New students with previous graduate credit, whether or not with a Master's degree, will be required to register for at least two non-research courses in Chemistry during their first semester in this department. Additional courses may be required by the GSC or by the student's Guidance Committee to make up deficiencies.

II. 4 Residence Requirements

- Normally, about four to five years are required for a full time student making good progress to complete all the requirements for a Ph.D. degree after obtaining the baccalaureate.

- A minimum of two consecutive semesters of full time residence is required of all students working toward the Ph.D. The Graduate School requires a minimum of twenty-four units exclusive of 794 units.

II. 5 Examinations

a. Graduate Record Examination

At least the aptitude section of this examination must be taken by all prospective Ph.D. candidates. It is usually taken prior to admission, but must be taken before the beginning of the student's first semester as a graduate student.

b. Foreign Language Requirement

There is no fixed language requirement for the degree. However, should it be deemed necessary in special circumstances, the Guidance Committee can require comprehension skills in a foreign language.
c. English Language Proficiency

Those students required to take English classes, are also required to meet with the GSC after their first semester, and subsequent semesters at the GSC's request, to demonstrate proficiency of the English language prior to being allowed to take the Screening Procedure. Proficiency in English is essential to successfully obtaining a Ph.D. degree at this university.

d. Screening Procedures

Appointment of a Guidance Committee and registration for research are contingent on passage in a single semester of a least two graduate courses with grades of B- or better, and with an overall B average in graduate work.

Typically in the fourth or fifth semester, a Ph.D. Guidance Committee is assembled. This committee consists of five members; your research advisor, 3 other chemistry professors (one from outside your area of research specialization) and one tenured professor from a department outside chemistry. The committee evaluates your course work for depth, breadth and performance, approves transfer credits (if any), and evaluates your research progress and intellectual development from an oral presentation and defense of your research project. Upon evaluation of your progress, the committee will recommend that the "Report on the Screening Procedures" form be signed by your Research Advisor and the Department Chairman, and sign off on the "Permission to take Ph.D. Qualifying Examination" form.

e. Qualifying Examination

This examination is scheduled upon recommendation by the student's Guidance Committee. The Qualifying Examination will generally not be scheduled during recesses, vacations or the summer session. Official reports on the result of the examination are made to the Graduate School Office at times specified by that Office.

The student is required to demonstrate the ability to think independently and to show creativity in research. The examination is partly written and partly oral, the oral part comprising a defense before the entire Guidance Committee of (1) written answers to questions previously supplied by the Committee and (2) two research propositions which the student has submitted. The examination maybe scheduled for two sessions on successive half-days.

QUALIFYING EXAM DESCRIPTION

- A Request to Take the Qualifying Examination form should be filed with the Graduate School Office during the semester preceding the one in which the Examination is to be taken, together with a credit summary from the Office of the Registrar. This form officially sets up the Guidance Committee. It is frequently expected that the examination will be attempted during the second year of graduate work. In any case it must be attempted before the end of the fifth semester, and the student must have at least twenty-four graduate level units of non-research courses completed or currently in process before the examination is taken.
Two weeks before the scheduled date of the examination, the student submits copies to each member of the Guidance Committee of two propositions in the field of Chemistry (including Chemical Physics). These propositions might involve, for example:

(a) suggestions for original research based on literature reading,
(b) suggestions for further original research in the student's general field,
(c) an independent and original interpretation of results reported in the literature.

The propositions shall be unrelated to each other and neither shall be based directly on the student's research program.

When the propositions are received, the Chairman of the Guidance Committee will give the student two or three questions devised by the Committee. These will be in writing, and on topics with which the student should be familiar, in terms of research and course work taken. The answers must be returned (one copy to each committee member) within one week.

The student is expected to formulate the Propositions independently. The student may seek advice from the faculty as to whether the topic is suitable for presentation to the Committee, particularly as it relates to being different from the research area, but may not show the propositions to the faculty prior to presentation to the Committee. The student may not disclose examination questions to, or discuss them with, anybody until the examination is completed.

On the basis of the student's research ability (as demonstrated by the written reports, previous discussions with the Committee, the student's performance in seminars, etc.), mastery of general subject matter as demonstrated by course grades, and the performance in the Qualifying Examination, the Guidance Committee will either pass or fail the student at this point.

The Qualifying examination is taken only with the approval of the Guidance committee. Students are reminded that there are a number of technicalities which must be cleared well in advance with the office of the Dean of the Graduate School.

In the event of a fail, the Guidance Committee may allow a second attempt which may have the same or a modified format.

Not more than two attempts may be made to pass the qualifying Examination. Not less than six nor more than twelve months may elapse between these attempts.

II. 6 Admission to Candidacy

Admission to candidacy is by action of the Dean of the Graduate School, after recommendation of the student's Guidance Committee. The Qualifying Examination must be passed before the recommendation to candidacy may be made. After admission to candidacy, the Guidance Committee may be reduced to a Dissertation Committee of three members consisting of the Research Advisor, one member from the original Guidance Committee, and one faculty member from outside the Department of Chemistry.
II. 7 Seminar

Every Ph.D. student is required to give a departmental research seminar prior to the completion of the Ph.D. degree. This is usually done in the form of a presentation of thesis research, near the end of a student's tenure in the Ph.D. program, within the Divisional Seminar Series. Students must alert their Committee members as to the date and time of their presentation.

II. 8 Dissertation

- Each dissertation must conform to the general regulations furnished by the Graduate School Office. These, together with the deadlines for submission of various forms and abstracts can be found in the Bulletin of the Graduate School and in Information Sheets for Students issued each semester by the Graduate School Office.

- The following specific rules concerning form, style, content, organization and purpose of the dissertation have been adopted by the Chemistry Department.

  a. Form and style

     The thesis or dissertation must satisfy the requirements listed in the Bulletin of the Graduate School. The mechanical form or style of the dissertation should be governed by the following rules:

     1. The handling of topic headings, references, footnotes, etc., and the general sequence of topics may be that of any recognized chemical journal. The student ordinarily will take as a guide of the more common journals, such as J. Am. Chem. Soc., J. Chem. Phys. or J. Org. Chem., and is advised to consult with the committee if any serious departure from these guides is contemplated. The final approval of the student's choice rests with the committee.

     2. The dissertation must contain a bibliography at the end, regardless of how the references are handled in the body of the text.

     3. The dissertation must be typed; direct use of reprints is not permitted. Copies should be high quality photocopies.

  b. Content

     1. The dissertation must include (but not necessarily in the following order):

        a. An evaluation or critical appraisal of the problem, describing its background, its current significance, and its relation to the general field of chemistry in which it lies.

        b. All significant experimental and theoretical results obtained by the student, whether publishable or not.

        c. A critical discussion and evaluation of the results.
d. A summary (not an abstract).

e. A bibliography.

2. The dissertation may include an Appendix.

c. Organization of the topics

* The sequence of sections and the general organization of the dissertation must be such as to result in a logical and coherent presentation of the material.

* The above stipulation does not preclude an arrangement of the material into more or less distinct divisions (such as might correspond to the arrangement of successive publications), nor the placing of some sections in an Appendix.

* For such compartmentalization to be acceptable, it must be apparent that a reorganization into a single sequence would not result in any considerable improvement in clarity and conciseness.

* In the extreme case of divisions corresponding to separate research problems, each such division must meet individually the criteria normally applied to the dissertation as a whole.

d. Purpose of the dissertation

It is the Graduate School policy that "the dissertation must show technical mastery of a special field, undoubted power of research, and independent scholarly ability". As a consequence of these criteria of a dissertation it is necessary that:

1. The student demonstrate the ability to relate the particular problem, both as to background and as to results obtained, to the general field of chemistry to which it belongs.

The student should therefore address the dissertation to scientists in the same area of chemistry, and not so restrict it, that it can readily be appreciated only by those already expert in the particular field covered by the problem. On the other hand, it is not necessary to lay so extensive a foundation as to the background, description of techniques, discussion of results, etc., as would be necessary were the dissertation to be addressed to chemists in all fields.

2. The dissertation should be composed by the student alone. Excerpts from papers may be included, however, provided that the student has had a major role in their preparation.

3. The student shall be responsible for the defense of the dissertation before the Committee.

II. 9 Thesis Defense

The penultimate draft of the dissertation is defended orally before the Dissertation Committee. It may be accepted, accepted subject to recommended revisions, or rejected.
Section III

Requirements and Departmental Policies for the Master's Degree

The Master's degree serves purposes distinct from those of the Ph.D. program. The Master's degree is granted on the basis of a sound baccalaureate degree in chemistry, followed by advanced training which includes acquisition of deeper knowledge in a chosen field of chemistry and, at the option of the candidate, some experience in research.

Although it is not possible to be directly admitted into the Master's program, we understand there are several reasons why a student already admitted into our Ph.D. program may consider a Master's degree. A student may want to get a Master's on their way to obtaining their Ph.D., or they may have personal reasons for dropping out of the Ph.D. program and chose to leave with a Master's degree instead.

The requirements for the Master's degree in Chemistry are presented here in a more detailed manner than is possible in the Bulletin of the Graduate School. Within the framework of these requirements, an individual plan for each student is arranged by consultation with the appropriate faculty committee. It must be stressed that this information supplements but does not replace the Graduate Bulletin, and that all the requirements in the latter must also be fulfilled.

The student, while progressing towards the Master's degree, is asked to demonstrate three successive kinds of ability. These are:

- The ability to use undergraduate chemistry in a comprehensive rather than piecemeal fashion.
- The ability to advance formal training in areas related to the student's special interests in research.
- The ability to think critically and creatively and to engage in the search for more knowledge.

The student is expected to do well in graduate course work. Most importantly, aptitude and preparation for independent scholarship and research are appraised via informal conference with a faculty committee. Satisfaction of requirements as to residence and number of courses is necessary, although secondary to the above objectives.

New students will consult with a member of the Graduate Student Committee (GSC) who will act as their advisor until they have commenced research. The initial advisement for all entering students is conducted by, the GSC as a whole, or by a subcommittee thereof.
I. Procedures and Requirements during the First Year for New Graduate Students

I. 1 Only the Graduate Student Committee (GSC) is authorized to approve the student's program until such time as a Research Advisor has been formally selected. A student may not register for 590 (research) until first semester requirements are satisfied.

I. 2 Well prepared students are encouraged to take three graduate level non-research courses during their first semester, and all students must complete at least two graduate level non-research courses that carry graduate credit in their first semester unless explicitly advised to take make-up work by the GSC. Students who must undertake such make-up work, and consequently are unable to complete at least two courses in the Chemistry Department carrying graduate credit during the first semester, will not be able to register for Chemistry 590 earlier than the end of their second semester in graduate school, although they are entirely free to explore mutual research interests with any faculty member in whose work they may become interested.

I. 3 Programs for the second semester of graduate work will be determined in conference between the student and either the prospective Research Advisor or the appropriate subcommittee of the GSC. Students who have grades of B- or better in at least two courses, and a 3.0 GPA, may use Chemistry 590 as one of the two courses carrying graduate credit required for their second semester registration. Those who registered for at least two graduate level courses in the Chemistry Department during the first semester, but did not achieve grades of B- or better and a 3.0 GPA, must register for at least two further non-research graduate level courses in the Chemistry Department during the second semester.

I. 4 Students are not eligible for registration in Chemistry 590, or appointment of an M.S. Research Advisor, until such time as they have completed at least two graduate level courses in the Department of Chemistry in a single semester with grades of B- or better and an overall average of 3.0 or better.

I. 5 Irrespective of eligibility to register for Chemistry 590, all students seeking an M.S., or M.A. degree are required to make arrangements no later than the second semester with a member of the faculty who will become their Research Advisor and/or Chairman of their Guidance Committee when such a committee can be appointed. The GSC will arrange for appointment of an M.A. Committee Chairman for students taking the degree on courses rather than by research (See Section II.3. and II.4. of this appendix).

I. 6 All students are required to complete a minimum of four courses in the Chemistry Department during their first two semesters of graduate work. Dropping a course—except for serious illness or other grave emergency—is treated as the equivalent of receiving an unsatisfactory grade in it (C or lower). Students whose GPA is less than 3.0 at the end of the first two semesters are disqualified as degree candidates upon recommendation by the GSC and approval of the Chemistry faculty voting as a committee of the whole, unless very special circumstances warrant an exception.

I. 7 Students who complete these initial requirements satisfactorily, and for whom the M.S. Research Advisor has been appointed, are thereafter under the jurisdiction of said Advisor. It then becomes the responsibility of the student and the Research Advisor to see that the remaining departmental and graduate school requirements, as detailed in the this appendix and the Bulletin of the Graduate School, are satisfied.

A student's M.S. Committee may require registration in additional non-research courses beyond the course minimum where appropriate. For example, a course outside of a student's area of research (physical, organic, inorganic, etc.) may be required to demonstrate breadth of formal training.
II. Requirements and Departmental Policies Concerning Candidates for the Master's Degree

II. 1 Introduction

- The requirements for the Master's degree have been formulated in recognition of the fact that this degree has value for students with interests and objectives differing from those of Ph.D. candidates. The Master's degree is not normally completed as an intermediate stage toward obtaining a Ph.D. degree, although this may be done at a student's option by fulfilling the specified requirements.

- The Master's degree is more limited in its demands than is the Ph.D. degree, and may be obtained either by course work alone or by a combination of course work and a Master's thesis based on guided research.

II. 2 Graduate Record Examination

The requirements here are the same as for candidates for the Ph.D. degree, and are described in Appendix A, Section II.5.A...

II. 3 Programs Leading to the M.S. and M.A. Degrees

- The first year requirements for Master's Degree candidates are the same as those for the Ph.D. and are outlined in Section I.

- The Master's degree is awarded on the basis of either of two plans which the student may elect. These are:
  
  a. The M.A. degree is awarded on the basis of completion of at least six graduate level courses (24 units, not including 590) and approved by the Faculty Adviser, and acceptable performance on a comprehensive Final Examination. Four of the six courses must be at the 500 level or higher.
  
  b. The M.S. degree is awarded on the basis of completion of at least six courses, 24 units, carrying graduate credit, including not more than two registrations in 590, approved by the student's Guidance Committee, together with an approved thesis on the results of an original investigation (based on registrations in Chemistry 594ab), and a final oral defense of the thesis. Four of the six courses must be at the 500 level or higher.

II. 4 Program Leading to the Master of Arts Degree

- A Faculty Adviser will be appointed at the beginning of the second semester of residence to supervise the course program in the case of students electing the M.A. program if satisfactory progress has been made during the first semester. The Faculty Adviser is appointed by the GSC. The Faculty Advisor must approve all course work for the degree. The Final Examination Committee is chosen by the Faculty Adviser as appropriate to the student’s major field of concentration, subject to the approval of the Chairman of the Department.
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- The Faculty Adviser will recommend, in consultation with the student, appropriate courses to meet the six course minimum requirement and may require the student to take more than this minimum. A minimum grade of B- must be obtained in the courses presented to meet the six course requirement and a grade point average of 3.00 on all graduate work attempted.

- The Final Examination will cover those areas of chemistry appropriate to the courses presented by the student, and takes the form of a written, three hour examination. It may not be scheduled during recesses, vacations, or examination periods; in addition, members of the M.A. Committee may not be available for this purpose during the summer session. Not more than two attempts may be made to pass the Final Examination. At least three months must elapse between attempts. A student must be enrolled in GRSC810 when the examination is taken if not otherwise enrolled.

II. 5 Program Leading to the Master of Science Degree

- A student electing the M.S. program is strongly advised to consult with all of the members of the staff whose fields of research are of possible interest before choosing a topic. Normally, the student is free to follow personal preferences, although acceptance as a research student is contingent on the prior approval of the individual faculty member with whom the student would like to work.

- A Guidance Committee is appointed as soon as the Research Advisor has been selected after the student becomes eligible for registration in Chemistry 590 (research) as described in Sections 1.3., 1.4., and 1.5. of this section. This Committee is chosen by the Research Advisor, as chairman, and the two other members will consist of one faculty member from the same subject field as the Research Advisor and one from a different field. One of the members may be from another Department.

- The specific group of courses after the first year for each candidate is planned in conference with the Research Advisor with the approval of the Guidance Committee, which may, at its discretion, make requirements above the minimum six courses. A minimum grade of B- must be obtained in the courses presented to meet the six course requirement and a grade point average of 3.00 on all graduate work attempted.

- The Research Advisor is responsible for the immediate supervision of the thesis work and of the preparation of the thesis itself. Final acceptance of the thesis is based upon approval of the penultimate draft by the Guidance Committee and upon passing the oral Final Examination held by the Guidance Committee. This Final Examination will be scheduled at a time mutually convenient to the student and the Committee. It may not be scheduled during recesses, vacations, or examination periods; in addition members of the Guidance Committee may not be available for this purpose during the summer session. It will be of about two hours duration and covers a defense of the thesis by the student. The Committee will then report to the Department whether the student has passed or failed. Not more than two attempts may be made to pass the Final Examination. At least three months must elapse between these attempts.

- Students who have satisfied the scholastic requirements for the Ph.D. program at the time of completion of the Master's degree are eligible to continue as candidates for the Ph.D. if they so desire.

- Each thesis must conform to the general regulations furnished by the Graduate School Office. These, together with deadlines for submission of various forms and abstracts, can be found in the Bulletin of the Graduate School and in Information Sheets issued each semester by the Graduate School Office.
II. 6 Other Rules and Regulations

a. Transfer of Credits

- No more than one graduate level course taken in another institution may be transferred for purposes of satisfying the course requirement for the Master's Degree. No research credit can be transferred for this purpose.

- At least half of the course requirement (other than research) must be met through courses, 500 level and above, taken in the Chemistry Department.

- A course taken before completion of the Bachelor's degree at this University (and in excess of the graduation requirements) may be counted towards a Master's degree only if the student has successfully petitioned for such an arrangement before registration for the course.

b. Registration Requirements

At least two semesters and a ten week summer session are needed by a full time student making good progress to complete the requirements for the degree. More commonly a minimum of three semesters and a ten week summer session is necessary.

c. Admission to candidacy

An application for the Master's Degree must be filed during the Semester prior to that in which the student expects to receive the degree, and before registration in 594a.

d. Seminars

All prospective Master's students are required to attend the appropriate seminar in their field of research or of major concentration. All students are required to attend the Departmental Research Conference.
International Students

This Section has been added as an aid for foreign students studying in our department toward either the Ph.D. Degree or the Master's Degree. It contains information stated elsewhere, but is repeated here because it's importance to international students on student (F-1) or exchange (J-1) visas.

I. English Language Proficiency

Students required to take remedial English classes must meet with the GSC after the completion of their first semester English course(s) (and subsequent semesters at the GSC's request) to demonstrate proficiency of the English language prior to being allowed to enter into the Screening Procedure. Proficiency in English is essential to the successful completion of a Ph.D. degree in this department.

II. Leaving and Re-Entering the U.S.

- If you are planning on leaving the United States, either to return to your country of origin for a visit, or to visit another country, it is imperative you contact the Office of International Services (OIS) before doing so. Your immigration documents (I-20 or IAP-66) must be updated BEFORE you leave the United States, in order for you to be allowed to re-enter the United States upon your return. The OIS office can also advise you as to whether the Visa stamp in your passport needs to be reissued (see below) while you are out of the United States. General immigration information from the OIS is available on their web page (http://www.usc.edu/dept/student-affairs/OIS); the OIS phone number is 740-2666.

- Regulations are constantly changing and different rules apply when traveling to Canada and Mexico. The graduate student coordinator can help you navigate this process and he or she may have important additional information regarding your re-entry into the United States. For this reason, IT IS YOUR RESPONSIBILITY TO BE AWARE OF THE RULES AND REGULATIONS PERTAINING TO YOUR Visa AND TO CONTACT OIS AND THE GRADUATE STUDENT COORDINATOR WELL IN ADVANCE BEFORE YOU TRAVEL.

- Lastly, we suggest you obtain a current transcript from the University and bring it with you on your trip. A transcript is sometimes requested at the time of your re-entry and the lack of it can delay your re-entering the United States.

III. Re-Entering the U.S. With A Expired Visa

Do NOT attempt to re-enter the United States with an expired Visa. If you do, you will not be allowed back into the United States for a minimum of five years. Check the expiry date of both your visa and passport well before you travel. If your visa needs to be renewed, it must be done while you are out of the U.S. and you may need to arrange an appointment with the U.S. embassy in the country you are visiting.