

The Ph.D. Program

in

Chemistry and Biochemistry

at

The University of Oklahoma

June 2006

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PREFACE

The Ph.D. degree is awarded for excellence in research and scholarship, not merely because a required program of courses has been completed or a given time has been spent in its pursuit. It signifies the acquisition of a thorough and comprehensive understanding of a research area as well as the attainment of a high level of professional independence and competence. The Graduate College of The University of Oklahoma normally grants a Ph.D. degree only to an individual who does not already hold the Ph.D. or a similar degree.

A student should normally expect to spend at least four full academic years beyond the bachelor's degree in the pursuit of the Ph.D. During this period of time, the student must (1) successfully complete the appropriate coursework, (2) successfully complete the Preliminary Exam(s), (3) successfully complete the General Examination, and (4) submit and successfully defend the results of original research which will be presented as a dissertation.

The purpose of this document is to describe the requirements for a student to be awarded the Ph.D. in each of the divisions of the Department. Individual topics will be discussed here in the approximate order that students will encounter them. Thus, the initial requirements will apply to every student, while later requirements will differ for the six divisions within the Department.

It should be noted that the student must also completely and independently satisfy the requirements prescribed by the Graduate College at The University of Oklahoma. These requirements are given in the Graduate College Bulletin, which can be obtained from the Graduate College.

I. PROFICIENCY OR PLACEMENT EXAMINATIONS

The purpose of the entrance examinations is to establish the proficiency level of new students in the areas of Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, and Physical Chemistry. Because the results of these examinations will provide the basis upon which the Departmental Graduate Committee will advise the student with regard to initial graduate course work, each student is required to take all five placement examinations upon matriculation. The only exception is that a student may choose not to take an exam in any area in which he/she has not had a formal course above the freshman level.

It is important that the student recognize the importance of these examinations and therefore prepare for them, so that the Graduate Committee has an accurate assessment of the strength of the student's background in various areas and hence can advise the student properly. A thorough preparation for these exams has the additional advantage of serving as a review of past coursework and therefore as a means to maximize one's ability to begin his/her graduate career on a positive note. Furthermore, students in the Analytical and Physical Divisions are required to pass the proficiency exams in their area by the end of their second semester (not including summer) at OU, as detailed below in the Divisional requirements.

Proficiency examinations are given during the University's enrollment period in the Fall and Spring. These examinations cover well-defined material that is presented in the undergraduate courses in the different areas. A list of textbooks that are suitable to use for review will be provided to students prior to matriculation.

II. ENGLISH LANGUAGE REQUIREMENTS

A. According to the Graduate College Bulletin, any graduate student for whom English is not the native language must be certified as proficient in English before he/she may assume teaching duties that require contact with students. Certification tests in oral and written English are administered by the English Assessment Program.

B. All students for whom English is not the native language are required by the Department of Chemistry and Biochemistry to demonstrate a suitable level of English proficiency. This means that a student must reach the minimum level of "Certified to Support" in the written and oral English tests administered by the English Assessment Program of the university. This should be satisfied by the end of the third semester. Satisfying this requirement is a prerequisite to the oral defense of the research proposition in the General Examination.

III. COURSE REQUIREMENTS

A. General Lecture Course Requirements

Every student must complete a minimum of twenty-one (21) credit hours in letter-graded lecture courses at the 5000 or 6000 level. At least nine credit hours must be taken in courses at the 5000 or 6000 level that are offered in at least two other divisions or departments outside the student's major division. If more than three hours of these general lecture course requirements are to be taken outside the Department of Chemistry and Biochemistry, prior approval must be given by both the Advisory Committee (see below) and the Graduate Committee. A minimum grade average of 3.0 (on a 4.0 scale) must be achieved for the first twenty-one credit hours taken which qualify as General Lecture Courses, with not more than two grades below B allowed. Failure to meet these requirements will result in the student being discontinued from the graduate program in chemistry.

Entering graduate students who show no Physical Chemistry on their transcript must take and pass one of CHEM 3453, CHEM 3423, or the Physical Chemistry proficiency exam. Entering graduate students who have not taken one year of Organic Chemistry must take and pass one of CHEM 3053, CHEM 3153, and/or the Organic Chemistry proficiency exam. These undergraduate courses cannot be used to satisfy either the 21-hour requirements described above or the 90-hour total required for the doctoral degree.

B. Divisional Lecture Course Requirements

The student will also be required to complete specific core courses required in their major division, maintaining a minimum of 3.0 grade average (on a 4.0 scale) on all such courses and receiving no more than one grade below "B". These courses are described in the sections describing each division.

C. Transfer Credit

Graduate lecture course credits obtained in other institutions may be transferred to fulfill some of the above requirements or the 90 hour total requirement (see Section E below). As a first step, the student should consult the regulations in the Graduate College Catalog that govern the acceptability of a course for transfer. To receive credit for each such course, the student should submit a written petition first to the appropriate division(s) [i.e., the division(s) which reflect(s) the nature of the course(s) being transferred], then to the Departmental Graduate Committee, and finally to the Ph.D. Advisory Committee (see below). This should be done prior to the Advisory Conference meeting (see Section V.A.). The division and/or Advisory Committee also typically examines the textbook(s) and copies of exams taken by the student in the course in question in order to evaluate which OU course is equivalent to the course being transferred. If acceptable, each of these committees will in turn so signify by placing a written and signed memo to that effect in the student's file in the Departmental office. The corresponding University of Oklahoma course numbers should be clearly identified, whenever possible, by the division. The course(s) to be transferred should be incorporated into the Report of the Advisory Conference for final approval by the Graduate Dean.

D. Departmental Colloquium

All graduate students must enroll and participate in the Departmental Colloquium (CHEM 6970) throughout their entire graduate career (excluding summers).

E. Research Hours

Once enrolled in CHEM 6980 (doctoral research), continuous enrollment (at least 2 hours per semester) is required. Also, a maximum of 9 hours of CHEM 5990 can be applied towards the 90-hour total (next section).

F. Total Number of Hours

A minimum of 90 total graduate-level, post-baccalaureate credit hours is required for the Ph.D. degree.

G. Petitions

A student with special needs or circumstances may petition to receive an exception to any Ph. D. degree requirement(s) itemized in this document. Such a petition, submitted in writing, must be successively approved by the student's Ph. D. Advisory Committee (if appointed), the Graduate Committee of the Department, and, if appropriate, to the Graduate College. The petition must clearly specify the exception requested, with detailed justification, and the modified requirement that will substitute for the original (e.g., different timetables or courses).

IV. RESEARCH

The demonstrated ability to perform original independent research is the single most important aspect of a graduate education in Chemistry and Biochemistry. This includes designing and conducting studies, evaluating the data collected/obtained, considering previously published work, and formulating valid conclusions. The Dissertation (see VII below) represents the essential demonstration of this ability.

A. Choice of Major Professor

To ensure that new students are fully informed about the research opportunities available in the Department, all graduate students entering in the Fall semester are required to attend a series of talks at the beginning of the semester in which each faculty member describes research projects that are under investigation in his/her lab. Attendance at these brief talks is mandatory, and attendance will be taken. Following these general overview talks, each graduate student should make an appointment with at least three prospective Major Professors to discuss in more detail the nature of their research and the specific dissertation projects that are available. Students are encouraged to have these individual meetings as soon as possible, since they must be completed well before the end of the first semester in Graduate School. At the conclusion of each meeting, the student should obtain the professor's signature on the form shown in Appendix A. After obtaining a minimum of three signatures, the student must indicate his/her selected division and three preferences for a Major Professor. It should be noted that the selected professors do not have to be members of the chosen division. Thus, for example, a student may elect to pursue a Ph.D. in the Physical Chemistry division with a Major Professor in Biochemistry. The list will be reviewed by the Graduate Committee, which will forward its recommendation to Committee A (the executive committee of the department). Subject to the consent of the faculty member, Committee A will make the assignment of the student to a Major Professor. This process must be completed by the end of the first semester of enrollment. Until this process is finished, a student is not formally registered with a research advisor. Students entering in the Spring semester are required to follow the procedures given above except those pertaining to the faculty talks.

B. Expectations.

Since the Ph. D. degree in Chemistry and Biochemistry is a research-based degree, the entering graduate student should begin research work as soon as possible. Normally, this would start immediately after selection of the Major Professor. Intensive activity in the laboratory, including the necessary library work, will provide a much more realistic context for the lectures and seminars in which the student will participate.

As noted earlier, the single most important aspect of a graduate education in Chemistry and Biochemistry is research. Research productivity is not measured by the total number of hours spent in the lab and/or talking science, but by the demonstrable (i.e., publishable, or worthy of inclusion in a Dissertation) accomplishments of the time spent on research. This somewhat subtle distinction is sometimes overlooked or forgotten, and students may suddenly become aware that considerable time has gone by with little or no demonstrable progress. Consequently, it is important to recognize from the beginning that the amount of time spent in graduate school is dictated primarily by the student and by how disciplined his/her work habits are. It should also be noted that the time between semesters does not constitute vacation time, but rather an opportunity to make progress in research without the interruptions and distractions caused by coursework or teaching responsibilities.

The research progress of each student is evaluated during each year, including the first, that they participate in the graduate program in Chemistry and Biochemistry. Such documentation will be incorporated into the Annual Progress Report (see section VI below) which is submitted each year in April.

Graduate students are expected to complete their doctoral degree requirements and dissertation by the end of their fifth year. The Department will not guarantee further support for any student who has not completed the dissertation within that time period. It is recognized, however, that because of the intrinsic unpredictable nature of research, additional time may be required. Under these circumstances, students may petition the Graduate Committee and/or Department for further support.

C. Alterations in the Student's Major Professor and/or Division.

A student may change his or her division and/or Major Professor. This would normally occur when the

student's major research or career interests have changed. First, the student must obtain permission from the newly-chosen Major Professor. Second, if the student changes divisions, a plan for meeting the candidacy requirements of the new division must be approved by its faculty and the Graduate Committee. Third, documents noting the change and its approval must be filed in the Department office. All of these steps must be completed before the change is considered official. The Report of the Advisory Conference, if on file in the Graduate College, must also be amended using the appropriate form.

V. THE ADVISORY COMMITTEE

The Advisory Committee consists of at least five graduate faculty members, including at least one member from outside the department. The members are normally selected by the student in consultation with his/her Major Professor. There are four primary functions of this committee.

A. The Advisory Conference

Within the second semester of enrollment the student must arrange a meeting with his/her Advisory Committee to plan his/her graduate program. Note that by this time the student must have selected his/her Major Professor and Division (Section IV). Prior to attending this meeting, the student should obtain the Report of the Advisory Conference form from the Graduate College, fill it out in consultation with his/her Major Professor, and distribute a draft copy to each member of the Advisory Committee. Following the meeting, the Report of the Advisory Conference, amended as necessary, must be signed by all members and the Graduate Liaison. Any subsequent amendments of this report, including a change of committee member(s), requires a completed Request for Change in Doctoral Advisory Conference Report form. These forms are also available in the Graduate College. For each form, the completed original must be filed in the Graduate College, and a copy must be filed in the Department Office.

B. General Examination

In conjunction with the appropriate division of the Department, the Advisory Committee will supervise the student's general examination program (Section VIII).

C. Yearly Evaluation of Student Progress

Each year during the student's graduate career, the Advisory Committee will be responsible for evaluating the progress of the student and recommending appropriate courses of action based upon this progress (Section VI).

D. Preparation and Defense of the Dissertation

Although the Major Professor will be most closely involved in this process, the entire Advisory Committee is responsible for supervising the preparation and conducting the defense of the Ph.D. Dissertation (Section IX).

VI. YEARLY EVALUATION OF GRADUATE STUDENTS

The performance of all graduate students will be reviewed annually to ensure that appropriate progress toward the degree is being achieved. The evaluation will initially be performed by the Advisory Committee at an annual meeting, arranged by the student and held prior to April 1. The student will supply all the members with a research and general progress report (an example is provided in Appendix C). The Major Professor will prepare a written evaluation, signed by all committee members, based upon this material and discussions at the annual meeting. These documents must then be filed in the Department Office prior to April 1 to allow consideration by the Graduate Committee for continued enrollment in the Graduate Program and Graduate Assistant support.

The Departmental Graduate Committee will, based on the above documents and any other pertinent information, evaluate the progress of each student. The results of the evaluation will then be given to each student in writing. The Graduate Committee would normally classify the student's progress in one of the following categories:

1. The student's progress is satisfactory, and the student should proceed with the Ph.D. program.
2. The student's progress is marginal, and specific courses of action will be required for improvement.
3. The student's performance is such that they will be removed from the Ph.D. program, but allowed to pursue a terminal M.S. degree.
4. The student's progress is such that they will be required to obtain an M.S. degree as a prerequisite to continuing in the Ph.D. program.
5. The student's progress is inadequate, and they will not be allowed to continue in the graduate program in the Department of Chemistry and Biochemistry.

VII. ACADEMIC MISCONDUCT

The Student Code specifies the responsibilities and conduct of students at OU, and it is the responsibility of each student to be familiar with the definitions, policies, and procedures concerning academic misconduct. The Student Code document is available from the Office of the Vice President for Student Affairs. The definition of academic misconduct is as follows:

Academic misconduct includes (a) cheating (using unauthorized materials, information, or study aids in any academic exercise), plagiarism, falsification of records, unauthorized possession of examinations, intimidation, and any and all other actions that may improperly affect the evaluation of of a student's academic performance or achievement; (b) assisting others in any such act; and (c) attempts to engage in such acts.

Of particular note for chemists and biochemists in training is the issue of citation, and it important that Chemistry and Biochemistry students understand, before they write their research proposition and dissertation, that any facts, conclusions, or ideas that are extracted from another paper or source must be properly referenced back to their source. In addition, verbatim usage of another author's text must be placed in quotes. Failure to do so constitutes plagiarism. Proper professional ethics demands proper citation in all papers and presentations.

VIII. GENERAL AND RELATED EXAMINATIONS

The purpose of the general and related examinations is to develop and exhibit the competence of the student in the following areas:

- Knowledge of the fundamental concepts and of the current status of understanding in one of the areas of Chemistry and Biochemistry;
- Ability to conduct independent, original research;
- Ability to learn independently, i.e., to effectively teach oneself a foreign topic;
- Ability to think independently, i.e., apply acquired knowledge to new chemical and biochemical problems.

The student's division and Advisory Committee are jointly responsible for administering the general and related examinations. These examinations are normally split into two parts:

1. Testing of the student's general and specific knowledge within the area represented by the student's major division;
2. Preparation and defense of a research proposition.

The approaches used to achieve the first goal above varies for the different divisions within the Department. The exact requirements for completing the general and related examinations in each of the divisions of the Department are given below (section X).

The research proposition is common to the General Examination in each division and offers the Advisory Committee the opportunity to evaluate the student's ability to design a cogent, creative, and organized research project. Thus, the student must effectively present a scientific rationale in both a written and an oral format. As a consequence, the ability to write and speak in unambiguous English is a necessary, but not sufficient, requirement for receiving a passing grade. A secondary objective is to acquaint the student with the appropriate procedures required to apply for federal grant funds or to justify a proposed industrial project. Thus, the written portion of the research proposition must follow the guidelines for a proposal to either the National Institutes of Health (NIH) or the National Science Foundation (NSF). Specific requirements for proposal preparation and defense are detailed in Section X.

The student must obtain an Application for General Examination from the Graduate College prior to the oral defense of the Research Proposition (not prior to the preliminary examination). This form must be signed by all members of the Advisory Committee and by the Departmental Graduate Liaison, and then it must be filed in the Graduate College (with a copy filed in the Department Office) at least **two weeks before** the oral defense is to be held. The student should bring a copy of the Report of General Examination, obtained from the Graduate College, along to the oral defense. The Major Professor will return this Report, filled out and signed, to the Graduate Dean within one month following the oral defense with a copy being sent to the Department Office.

Failure to complete satisfactorily the General Examination in any division will result, at the discretion of the Advisory Committee and the division, in transfer to the M.S. program or dismissal from the division.

IX. Ph.D. DISSERTATION

Following completion of the General Examination, the student normally concentrates upon original research that will make a contribution to existing knowledge, and, in the process, demonstrates both a mastery of the research methods and tools of the appropriate field and also the ability to address a significant problem and arrive at a successful conclusion. In consultation with the Major Professor, this culminates in the writing of the Ph.D. Dissertation. Instructions for the format of the Dissertation are obtained from the Graduate College. Following preliminary acceptance by the Major Professor, a reading copy must be submitted, along with a 350 word abstract, to the Graduate College. Deadlines for submission, which are coupled to the date of graduation, are given in the current class schedule for each semester and summer session. The student must also give one reading copy to each of the Advisory Committee members for approval prior to the Final Oral Examination. All copies, including the one to the Graduate College, should be distributed at least two weeks before the Final Oral Exam. Prior to the Final Oral Examination, the student should consult with each member of the Advisory Committee to ascertain whether or not the Dissertation is acceptable for defense, and whether any changes or corrections are required. The student then arranges a date, time, and place for the Final Oral Examination so that all members of the Advisory Committee can attend. A memorandum announcing the scheduled date, time, place, and subject of the Final Oral Examination should be distributed to all members of the Department of Chemistry and Biochemistry. In the Final Oral Examination, the student will give a 45-50 minute presentation, open to the public, of the major portions of the Ph.D. Dissertation work. The presentation is followed by an oral examination of the Dissertation conducted by the Advisory Committee, interested Chemistry faculty, and any invited professional guests. The Report of the Final Oral Examination, obtained from the Graduate College and brought to the exam by the student, must be completed and returned to the Graduate Dean within 72 hours following the exam. The successful student must deposit three final copies of the Dissertation in the Library within sixty days following the **Final Oral Examination**.

In addition to the above, the student must be enrolled in at least two graduate credit hours at OU in the semester that the dissertation is defended. Also, the student must complete the following by the specified deadlines to graduate at the desired time:

1. Pay graduating fee in Bursar's Office (the deadlines are specified in the University Class Schedule).
2. Obtain from the Graduate College a dissertation topic card and a Survey of Earned Doctorate form. Each of these, appropriately filled out, along with the signed library card obtained when the three final copies of the Dissertation are given to the Library, should be filed in the Graduate College as soon as possible following the Final Oral Examination.

X. DIVISIONAL REQUIREMENTS

A. ANALYTICAL DIVISION

1. Course Requirements

CHEM 5103, CHEM 6113 and one of CHEM 5023 or 5113.

2. Seminar Requirement

Continuous enrollment in CHEM 6210 during every regular semester.

In the first year, the student will present a ~45-minute seminar on an assigned topic. A 1-2 page abstract with references should be distributed to all division members one week before the seminar.

In the first semester of the second year, the student must present a seminar on a topic of their choice, typically related to the General Examination. The topic must be approved by the faculty member in charge. The student will thoroughly review the literature, prepare a 5-15 page typewritten report including appropriate references, and present a seminar on the subject. The written report should be distributed to all members of the division and of the student's Ph. D. Advisory Committee at least one week before the seminar. In both the written report and the seminar, the student must demonstrate the ability to identify the significant problems and results within the area.

In the beginning of the third year, the student will present a seminar based on their research project. The seminar should include the background material, results, and plans for future studies. An extended abstract, 5-10 pages in length, with appropriate references should be prepared and distributed to all members of the division at least one week before the seminar.

For the fourth year and beyond, the student must present a seminar on their research or on a faculty-approved topic, typically related to the student's research project. A 1-3 page abstract with references should be distributed one week before the seminar.

3. General Examination and Related

a. Preliminary Examination

The student must demonstrate an adequate proficiency in the area of Analytical Chemistry by passing the placement examination with a sufficiently high score. Students who fail to do this at the time of entrance into the graduate program will be allowed two additional opportunities to do so by the end of their second regular semester of enrollment. Failure to satisfactorily complete the Preliminary Examination requirement by the stated deadline will result in the student being discontinued from the Ph.D. program in Analytical Chemistry.

b. Research Proposition

Each student must successfully select, prepare in appropriate written format, and orally defend a research proposition. The proposition must concern a topic unrelated to the research program of the student's advisor. This requirement must be completed before April 15th of the fourth academic semester of enrollment, excluding summers. For students originally enrolling in a Spring semester, this requirement must be completed before November 15th of the fourth academic semester, excluding summers.

Initially, one to three topics should be submitted to each member of the Ph. D. Advisory Committee, for their consideration and evaluation, one week prior to a meeting that has been scheduled by the student. Each topic should be briefly outlined in 1-3 typewritten, double-spaced pages accompanied by 3-4 recent and pertinent references. If all submitted topics are judged unacceptable by the Ph. D. Advisory Committee, the student will have only one additional opportunity to submit additional or revised topic(s). Typically, topic approval should be completed prior to the end of the third academic semester excluding summers.

The typewritten proposal will be completed in either NSF or NIH format with strict adherence to the stated page limitations. Copies of the NIH and NSF directions for the preparation of a grant proposal can be obtained through the Proposal Services unit of the Office of Research Administration. The written proposal must be distributed to each member of the Ph. D. Advisory Committee at least two weeks prior to the oral defense.

At least two weeks prior to the oral defense, the student must file an Application for the General Examination with the Graduate College. The student then arranges a date, time, and location for the oral examination such that (1) all members of the Ph. D. Advisory Committee can be present at the meeting, and (2) the

meeting does not occur during any final examination period scheduled for the University. The oral defense will consist of a 25-30 minute oral presentation of the proposal by the student followed by questioning by members of the Ph. D. Advisory Committee and any other interested faculty. Questions may cover material from the student's general education as well as those particularly pertinent to the proposal.

If either the written proposal or the oral defense is judged unsatisfactory, the student will have a second and final opportunity to complete this requirement. **HOWEVER, THIS MUST BE ACCOMPLISHED PRIOR TO THE DEADLINE DATE LISTED ABOVE.**

Since an unsatisfactory result on the initial attempt is a relatively common occurrence, the student is **STRONGLY ADVISED** to complete the initial oral defense at least **TWO MONTHS PRIOR TO THE DEADLINE**. This approach will generally allow adequate time to properly prepare for a second attempt if needed.

Failure to satisfactorily complete the Research Proposition requirement by the stated deadline will result in the student being discontinued from the Ph.D. program in Analytical Chemistry.

B. BIOCHEMISTRY DIVISION

1. Course Requirements

CHEM 6813, MBIO 5843 and any two additional 3-hour letter graded lecture courses at the 5-6000 level in the division of Biochemistry. Entering Biochemistry Division graduate students will take an initial placement exam. Students demonstrating an inadequate background in Biochemistry will be required to take appropriate coursework.

2. Seminar Requirement

Continuous enrollment and participation in CHEM 6721 during every regular (Fall or Spring) semester. Each student will present one 45-minute seminar per year on his/her own research or on a topic approved by the student's Ph.D. Advisory Committee.

3. Preliminary Examination

The student must take and pass the Preliminary Exam in Biochemistry at the beginning of the fourth regular semester (fifth for a student initially enrolling in the Spring).-Students entering with an M.S. degree must also take this exam, but may elect to take it prior to the deadline. The exam will typically be given on the Friday preceding the beginning of classes in January, and will contain up to twelve essay-type questions to be answered in two 4-hour sessions, one in the morning and one in the afternoon. If the performance is judged unsatisfactory, the student may take a second exam offered within two weeks of learning the results of the first exam. The initial, and, if necessary, final, results will be communicated in writing to the student and filed in the Department Office within one week after the exam.

4. General Exam

a. Research Proposition

Students must schedule the oral defense of the research proposition in the fourth regular semester (fifth for those entering in the spring). In the research proposal, the student will identify one (or more) important, highly-focused specific aim(s) or issue(s) in a field, and then present a background literature survey, followed by an exposition of the approaches and techniques that could be used to provide an experimental resolution of the issue(s). The organization of the proposal will follow most, but not necessarily all, of the guidelines used by NIH (a copy of these will be provided to the student). The successful final written proposal will contain sufficient detail (such as the appropriate controls, justifications for data interpretation, consideration of two or more alternative outcomes of critical experiments, and the subsequent direction of research to be followed for each possible outcome) to demonstrate that the student has chosen the most appropriate experimental design and technique to solve the problem. In the oral defense, the student will present, justify, and defend his/her proposed experiments. Thus, this examination will evaluate the student's creativity and scientific knowledge, as well as the student's ability to communicate those ideas and pertinent facts both orally and in written form.

Students entering the program in the Spring semester will follow the same schedule as that outlined below, except the deadline dates mentioned will occur in the fourth and fifth regular semesters rather than the third and fourth regular semesters mentioned for the usual student, who enters the program in the fall semester.

(1) Choice of Topic

The topic of the research proposition must originate with the student. The student is encouraged to choose a topic that he or she finds interesting and that will broaden his or her biochemical background. However, the topic may require techniques that the student is using in the laboratory. If this occurs, the student should be aware that the closer his or her topic and experimental approaches are to those of the student's actual research, the greater will be the faculty's expectation of his or her mastery of those techniques and experimental design. A student's Major Advisor may not participate in the written and oral portions of the General Exam if the Biochemistry Division or the Ph.D. Advisory

Committee determines that the topic is closely related to the student's research. In such cases, the student must petition to the Graduate College to temporarily replace his or her Major Professor on the Ph.D. Advisory Committee for the written and oral defense of the proposal.

When choosing a topic, the student is encouraged to seek advice from his/her Major Professor and/or Ph.D. Advisory Committee members concerning suitability of a particular topic or about using a particular technique to examine an issue. However, the faculty are not required to consult with the student concerning topic(s).

(2) Topic Submission, Topic Approval

A two-page (maximum) outline of the problem(s), its importance, and the proposed experimental approaches to solve the problem must be submitted to all members of the student's Ph.D. Advisory Committee and all members of the Biochemistry Division faculty on or before the second Friday in October of the student's third regular semester. The faculty will schedule a meeting of the Ph.D. Advisory Committee and any interested members of the divisional faculty, to be held during the following week to discuss, in detail, the various aspects of the proposed topic. If desired, the student may schedule a meeting earlier in his/her career to obtain topic approval.

If the Ph.D. Advisory Committee disapproves the topic, the student may submit a revised, or entirely different, topic for approval. The revised/different topic must be submitted on or before the fourth Friday in October of the student's third regular semester. The faculty will schedule a meeting of the Ph.D. Advisory Committee and any interested members of the divisional faculty, to be held during the following week to discuss, in detail, the various aspects of the proposed topic. If the Ph.D. Advisory Committee disapproves the second submitted topic, the student will be discontinued from the Ph. D. program in the Biochemistry Division and the Major Professor will report this outcome to the Chemistry Office within three working days.

(3) Written Research Proposal Submission and Approval

A student may consult with faculty and other students concerning any/all aspects of his/her research proposal. However, two items must be emphasized. First, that the proposal is to be one's own ideas and work. The student is responsible for the final product and its defense. Second, while faculty may be consulted for minor guidance/advice, no faculty member is required to consult with the student. The final written research proposal will consist of a maximum of 20 pages (typewritten double-spaced or printed with a high resolution printer using 10 or 12 point type, 20 point line spacing), not including references.

Rough Draft. A rough draft of the complete written proposal must be submitted on or before the first Friday in December of the student's third regular semester. The faculty will schedule a meeting of the student, the Ph.D. Advisory Committee and any interested members of the divisional faculty, during the following week to discuss, in detail, various aspects of the rough draft.

Final Copy. The final written proposal, which constitutes the written portion of the General Examination, must be submitted on or before the first Friday in February of the student's fourth regular semester. The faculty will schedule a meeting of the Ph.D. Advisory Committee and any interested members of the divisional faculty within two weeks following submission of the final written proposal to evaluate the document. If the Ph.D. Advisory Committee approves the final copy, then the date for the oral proposal defense will be set by the committee. This date will typically be within two weeks following approval of the written research proposal. If the final copy is disapproved, a grade of Unsatisfactory will be awarded and this outcome must be communicated by the Ph.D. Advisory Committee to the Graduate Dean, with a copy being given to the Chemistry office, within 72 hours. If deemed appropriate, the committee will also request an abeyance from the Graduate Dean for this written portion of the General Examination, and such a request will be included in the communication of the grade of Unsatisfactory to the Graduate Dean. If abeyance is approved by the Graduate Dean, the student will be given a second and final opportunity to submit a revised written research proposal within 2 weeks. The faculty should, in this case, schedule a meeting of the Ph.D. Advisory Committee and any interested members of the divisional faculty within 2 weeks of the second submission to evaluate the document. If the revised copy of the proposal is disapproved, the student will be discontinued from the Ph. D. program.

(4) Oral Defense of the Proposal

Following approval of the written proposal, a date, usually within 2 weeks thereafter, will be set for the oral portion of the General Examination. Following the oral defense, the student will be assigned a grade of Satisfactory or Unsatisfactory, and this outcome must be communicated by the Ph.D. Advisory Committee to the Graduate Dean with 72 hours following the defense. If a grade of Unsatisfactory is assigned, the committee may, dependent on the performance of the student, request abeyance from the Graduate Dean. If abeyance is approved, the student will be given a second and final attempt to pass the oral defense, typically within 4-6 weeks after the date of the first scheduled defense. If this oral component of the General Examination is judged unsatisfactory on the student's second attempt, the student will be discontinued from the Ph. D. program in the Biochemistry Division.

C. CHEMICAL EDUCATION DIVISION

The academic program for the degree with a specialization in Chemical Education consists of coursework in chemistry, science education, and history of science. In research, the student would have requirements in both chemistry and chemical education. The student would take the department's placement examinations and become a member of one of the department's divisions in addition to chemical education.

1. Course Requirements

a. Chemistry: Twenty-one hours of graduate level course work in chemistry. The specific course requirements will be the same as that required for one of the divisions in Chemistry and Biochemistry. There will also be a minimum of nine-hour research requirement in Chemistry.

b. Science Education, Statistics and History of Science: There will be a twelve-hour requirement in science education (EDSC 5513, 5523, 5543 and 3 hours of science education in research methods; EDSC 5532, 5533, or readings concentrating on research methods and curriculum development techniques used in science education), a six-hour requirement in psychological statistics (EPT 5023 and 6023, or PSY 5003 and 5013), and a six-hour requirement in the history of science (HSCI 3013 and 3023).

c. Electives: There will be ten hours of electives in science education, chemistry, education, and/or statistics determined by individual needs and approved by the student's Advisory Committee.

2. Seminar Requirement

The student must meet the seminar requirements of the division they have chosen.

3. General Examination and Related

a. Preliminary Exams: The student must take and pass a two part written examination during the semester (excluding summers) after meeting the chemistry, science education, and statistics course requirements. Part One of the examination will be a comprehensive test of chemical knowledge emphasizing the division of chemistry chosen by the student. Part Two of the exam will test application of science education knowledge. The two parts of the examination may be taken separately. Following the written examination(s) the student will take an oral examination which will focus upon elaborating and explaining the answers given on the written part. The examinations will be written, administered, and graded by the student's Advisory Committee. Three outcomes of the General Examination are possible:

- (1) Pass (without qualification)
- (2) Conditional Pass (the student passes with the condition that deficiencies are made up in a manner specified by the student's Advisory Committee and consistent with Graduate College regulations)
- (3) Fail

b. Research Proposition: During the semester (excluding summer) following successful completion of the Preliminary Exams, the student must submit a written research proposal. If judged acceptable, the student and the committee will set a date for an oral defense of the proposal. If the oral defense is judged acceptable, the student may continue in the Ph.D. program. If judged unacceptable, the student must repeat the oral defense within one month. If the second defense is judged unacceptable, the student will be discontinued from the Ph.D. program. The research proposal may be based on the student's dissertation topic.

4. Dissertation Research

For students who did not write a Masters thesis in Chemistry and Biochemistry, the dissertation requirement is met by one of two options. Option I would consist of a report on chemical research and a dissertation in chemical education. Option II would consist of a report of research in chemical education and a dissertation in chemistry. For those who have written a Masters thesis which meets the approval of the student's committee, the dissertation would focus on chemical education.

D. INORGANIC DIVISION

1. Course Requirements.

CHEM 5233, 5333, 5433 and CHEM 6863.

2. Seminar Requirement

Continuous enrollment and satisfactory participation in CHEM 6850 during every regular semester. Each student will present at least one 45-minute seminar per year on their own research or on a faculty-approved topic as well as direct at least one problem session per year. Problem sessions will normally deal with questions similar to those on the Preliminary and General Examinations.

3. General Examination

a. Preliminary Examination

The student must take and pass the Preliminary Exam in Inorganic Chemistry at the beginning of the fourth semester (fifth for a student initially enrolling in the Spring), excluding summer sessions. Students entering with an M.S. degree must take this exam, but may elect to take the exam at the beginning of their second semester at OU (third for a student initially enrolling in the spring). The exam will be given in two sessions, normally in the second week of January. If the performance is determined to be unsatisfactory, the student must take a second exam normally given during the first week of March in the same semester. The initial, and, if necessary, final, results will be communicated in writing to the student and filed in the Department Office.

b. Research Proposition

Students must schedule the oral defense of the research proposition in the same spring semester of their Preliminary Examination. At least one week prior to the scheduled defense, the complete written research proposition must be submitted to the faculty members of the Inorganic Division and of the student's Advisory Committee. In this proposal, the student will identify one (or two) important, highly-focused specific aim(s) or issue(s) in a field, and then present a background literature survey, followed by an exposition of the approaches and techniques that could be used to provide an experimental resolution of the issue(s). The organization of the proposal will follow most, but not all, of the guidelines used by NSF or NIH (a copy of these will be provided to the student). The successful written proposal will contain sufficient detail (such as the appropriate controls, justifications for data interpretation, consideration of two or more alternative outcomes of a critical experiment(s), and the subsequent direction of research to be followed for each possible outcome) to demonstrate that the student has chosen the most appropriate experimental design and technique to solve the problem. In the oral defense, the student will present, justify, and defend his/her proposed experiments. Thus, this examination will evaluate the student's creativity and scientific knowledge, as well as the student's ability to communicate those ideas and pertinent facts both orally and in written form.

(1) Choice of topics

The topic of the research proposition must be original, and must originate with the student. Students are encouraged to choose a topic that they find interesting and that will broaden their inorganic chemistry background. This topic may be related to ongoing or proposed research in the student's research group or within the Inorganic Division. Students should be aware that the closer their topics (and experimental approaches) are to those of their actual research, the greater will be the faculty's expectation of their mastery of that topic (and the techniques and experimental design).

When choosing a topic, the student is encouraged to seek advice from his/her Major Professor and/or committee members about the suitability of a particular experimental issue for a topic or about using a particular technique to examine an issue.

(2) Submission of topics

Two topics are required for review by the Advisory Committee. For each topic, a two-page (maximum) outline of the problem(s), its importance, and the proposed experimental approaches to solve the problem must be submitted to the Inorganic Division faculty and the members of the Advisory Committee before November 1 of the preceding semester (i.e., the November 1 just prior to the Preliminary Examination). The faculty will schedule a meeting to be held during the following week to discuss, in detail, various aspects of the proposed topic with the student.

(3) Approval of topic

If the faculty approve the choice of topic, then the dates for the submission of the final written copy and for the defense will be set, typically about 3-4 months from the time of topic approval. If the topic is disapproved, then the student will be scheduled for another committee meeting to consider a revised topic, and the student must submit the revised topic (typically the third week of January) for approval prior to the next committee meeting. If the topic is approved at the second committee meeting, the dates for proposal submission and final defense will be set. If the submitted topic is disapproved for a second time, the student will be discontinued from the Ph. D. program in the Inorganic Division.

(4) Consultation with the Committee

The student may submit, one time, a comprehensive working draft of his/her proposal (of any length less than 20 pages) for informal evaluation by the committee. The draft is usually submitted one month before the scheduled oral defense date. The student may then schedule a meeting with the committee to discuss his/her progress on the research proposition. Except for this single meeting, the faculty and student are not allowed to consult or otherwise discuss the student's proposal once the topic is approved. Students may consult with other students, but it must be emphasized again that the proposal is to be one's own ideas and work.

(5) Proposal submission, examining committee, and defense

The written proposal and defense dates will be set as outlined in step 3 above. The final research proposal will consist of a maximum of 20 pages (typewritten double-spaced or printed with a laser printer using 10 or 12 point type, 20 point line spacing; low resolution dot matrix printers should be avoided), not including references. The faculty will first evaluate the written proposal. If the written proposition is unsatisfactory, the student will be notified of the failure prior to the scheduled oral defense, and no oral defense will be held. If the written proposal is judged satisfactory, or sufficiently so to merit a further evaluation in person, the oral defense will be held as scheduled. A decision to proceed with the oral defense does not necessarily imply that the written proposition is wholly satisfactory. The student's research mentor shall attend the oral defense, but shall not serve as Chairperson (discussion leader) of the examining committee. The Chairperson (discussion leader) shall be one of the other committee members and shall be elected by the Advisory Committee. An unsatisfactory performance on *either* the written or the oral component of the proposition will be considered an unsuccessful attempt, and the committee will schedule dates for the submission of the revised proposal and for an oral defense, typically within 4-6 weeks after the date of the first scheduled defense. If *either* the written or the oral component of the proposition is judged unsatisfactory on the student's second attempt, the student will be discontinued from the Ph. D. program in the Inorganic Division.

E. ORGANIC DIVISION

1. Course Requirements

Two core courses (CHEM 5323 and CHEM 6443) and two special topics courses (CHEM 6650 and/or CHEM 6680). For students entering the program in the fall semester, the core courses should be completed by the end of the first academic year. For students entering the program in the spring semester, the core courses should be completed by the end of the third semester (excluding Summer).

2. Seminar Requirements

Enrollment and attendance in CHEM 6411 and 6431 is mandatory each semester following completion of CHEM 5323. Each student must give two colloquia. At least one of these should be a critical literature review of a topic of current research activity in organic chemistry. One colloquium may be a progress report on the student's own dissertation research. Students are encouraged to start presentation of colloquia in their third or fourth semester of attendance if the cumulative exam requirement is completed. Otherwise, presentation of colloquia should begin the semester after completing the research proposal requirement. If a research progress report is presented it should be given during the student's 2nd or 3rd year in the program. Selection of Literature Review Topics: Colloquium literature review topics are agreed upon in consultation with the colloquium director (C.D.) and may be in an area of interest or potential interest to the student. The topic should represent a significant area of current research in organic chemistry, should not be directly related to the student's dissertation research, and should not be one for which a recent review article has been written. Timetable: The following schedule should be followed both for research and literature colloquia:

- (1) topic approval by colloquium director (C.D.) at least 5 weeks in advance
- (2) one page outline to C.D. at least 4 weeks in advance
- (3) written draft of abstract & references to C.D. 2 weeks in advance
- (4) revised draft to C.D. and organic faculty by Monday preceding colloquium

Detailed guidelines for preparation of written materials and the oral presentation should be obtained from the C.D.

3. General Examination and Related

a. Preliminary Cumulative Examinations

Nine cumulative examinations are given each academic year, one per month (September - May). Three of these must be passed within 1 calendar year following completion of the core course sequence (CHEM 5323 and CHEM 6443). Students who enter the program having already completed the equivalent of the core course sequence (CHEM 5323 and CHEM 6443) must pass the three required cumulative examinations within three normal (Fall and Spring) semesters following entry into the program. Students are encouraged to begin taking the cumulative exams on a "no risk" basis following completion of CHEM 5323. Exam topics are not announced but broadly cover recent literature reports, general areas within organic chemistry, and subjects covered in departmental and divisional courses and seminars.

b. Research Proposition

No later than one year following the mandatory initiation of the cumulative exam sequence (i.e. in September or January) the student will submit at least three proposal topic mini-abstracts (proposal title, objective, general approach- 2-3 sentences) to each organic faculty member on his/her Advisory Committee. The student will then arrange to discuss the acceptability of the topics at a meeting with the organic faculty on the Advisory Committee that will be held within a week after submission of the written topics. In considering possible proposal topics the following considerations should be kept in mind: 1) the topics should not be closely related to research in his/her research group (e.g. should not have identical objectives, use the same kind of reactions, techniques, or tools); 2) the topics should not be closely related to each other (e.g. two total syntheses of natural products using the same or very similar methodologies or approaches); 3) the topics should be of strong interest to the student; 4) the topics should be original ideas/approaches; and 5) they should address problems of applied and/or fundamental importance. If no topic is acceptable, the student will be given one more opportunity to select a topic(s). A meeting to discuss the additional topic(s) will be arranged by the student, but must be completed within two weeks after the initial research topic meeting. If the second group of topics is not approved, the student will be discontinued from the Ph.D.

program in Organic Chemistry.

Within one month following the review of these topics, two of the topics which are deemed suitable by the majority of the faculty should then be outlined in a 1-3 page full abstract to be submitted to each member of the Advisory Committee. The full abstracts should define the objectives more specifically, should properly reference key prior published work, should state the significance/importance of the proposed study, and should briefly outline the plan for solving the problem. The student will then arrange a meeting of his/her Advisory Committee to select the final proposal topic. Within two months following the meeting at which the proposal topic is chosen, the student must submit copies of a typewritten proposal covering the chosen topic, in an NSF or NIH format, to each member of the committee. One week after submission, the student should contact each member of the Advisory Committee to determine whether significant revisions are needed. If one or more members see a need for significant revision, the student must call a meeting of the Advisory Committee within one week to determine the revisions that are necessary. The revised document should then be distributed within one week (or two weeks if extensive revision is required) to each member of the Advisory Committee. Following the initial approval of the written proposal or following the distribution of the revised version, the student must arrange a date, time and place to conduct an oral defense of the proposal such that all members of the Advisory Committee can attend. The defense date must be within three weeks of the initial approval of the written proposal or within three weeks of the distribution of the revised version. The date of the oral defense must be approved two weeks in advance by the Dean of the Graduate College.

The oral defense of the proposition will consist of a 30 - 40 minute oral presentation of the research proposal followed by questioning by the audience and members of the Advisory Committee. Questions may cover material from the student's general graduate education as well as those particularly pertinent to the proposal. The student's performance will be judged to be either satisfactory or unsatisfactory. Should the initial result be unsatisfactory, the student will be given only one additional opportunity, which must be completed within two additional weeks, to repeat the defense and fulfill this requirement. In some cases, the Advisory Committee may, if the oral portion of the defense is satisfactory but the written portion is deficient, only require that the written proposal be revised. Such revision should be completed by the student and approved by the Advisory Committee less than one month after the oral defense.

F. PHYSICAL DIVISION

1. Course Requirements

CHEM 5123, 5623 and a minimum of 6 credit hours from the following: 5153, 5673, 6453, 6553, and 6670 (may be repeated with change in subject). An appropriate course from another division may be substituted for the elected courses with the approval of the Physical Chemistry Division and the student's Advisory Committee.

2. Seminar Requirement

No general requirement, but students are encouraged to participate in group seminars.

3. General Examination

a. Preliminary Examination

The student must demonstrate proficiency in Physical Chemistry by passing the placement examination with a sufficiently high score, as determined by division faculty. A student failing this requirement on entrance to the graduate program will be given two additional opportunities to pass it by the end of the second regular semester of enrollment (excluding summers). Failure to complete this requirement will result in discontinuance from the Ph. D. program in physical chemistry.

b. General Examination

The general examination will consist of a seminar and a formal research proposal, presented for approval by members of the Advisory Committee and division faculty. The seminar topic will be assigned by faculty or chosen by the student; the student must successfully complete the seminar requirement before the end of the third regular semester of enrollment. A written summary of the seminar (5-15 typewritten pages) will be distributed to all members of the division and the Advisory Committee at least one week before the date of the seminar. In both the written summary and the seminar, the student must demonstrate the ability to identify significant problems and discuss important results in the topic area; the student must also be able to formulate logical and practical approaches for solving identified research problems. The division faculty and Advisory Committee members will approve or disapprove the student's seminar performance, considering both the written summary and the oral presentation.

If the seminar requirement is not satisfactorily completed on the first attempt, a student will be given a second opportunity to meet the requirement, during the first month of the fourth regular semester following initial enrollment. The Chairman of the Advisory Committee will file a written report to the Chemistry Department within one month following completion or failure of the seminar requirement by the student. Failure on the second attempt will result in the student being discontinued from the Ph.D. program in the physical chemistry division.

During the first month of the fourth regular semester of enrollment, or within one month (excluding summer months) after completion of the seminar requirement (whichever is later), a student must distribute separate brief summaries of one, two, or three topics for a research proposal to all members of the Advisory Committee and the division faculty. The student will be expected to meet individually with each of these faculty to obtain approval of a topic. If unanimous approval cannot be obtained within two weeks following distribution of the research proposal topic summaries, the student will have four additional weeks to attempt to obtain approval for a topic from a second list prepared by the student. If no agreement on a topic can be reached by consideration of either list of topics submitted by the student, a meeting of the Advisory Committee and the division will be held within one additional week to attempt to reach agreement on a suitable research proposal topic. Within one week following this meeting, the student must have received approval of a topic, or he/she will be discontinued from the Ph.D. program in physical chemistry.

Within one month following approval of the proposal topic, the student must submit copies of a typewritten research proposal on the topic to all members of the Advisory Committee and the division. An oral presentation of the proposal must be scheduled within two weeks after the proposal is given to the faculty. Unless exceptions are approved by the Advisory Committee, all members of the Advisory Committee and the division faculty must be present at the oral defense of the proposal. The proposal defense will consist of a 25-30 minute oral presentation of the research proposal, followed by questioning by members of the Advisory Committee and the division. The faculty must judge the student's performance as satisfactory, unsatisfactory, or incomplete. A report of unsatisfactory performance will result in discontinuation of the student from the Ph.D. program in physical

chemistry. If the performance is judged to be incomplete, the student will be asked to prepare additional material in writing and/or orally, with a deadline no later than one month following the date of the original oral defense. By the date of this deadline, faculty must decide whether the original presentation and written material, augmented by any additional material that may be presented, satisfactorily meet the division's General Examination requirements. A final report of unsatisfactory performance will result in discontinuance from the Ph.D. program in physical chemistry.

XI. Appendices

- A. Graduate Student Prospective Major Professor
 - Visits (see Section IV.A). 22
- B. Annual Progress Report (see Section VI) 23

Appendix A

Prospective Major Professors for Graduate Students

To assist graduate students in learning about the research in the Department and to assist them in choosing a Major Professor for their Ph.D. research, the Chemistry and Biochemistry Department requires that each graduate student meet and further discuss the research opportunities with *at least three prospective Major Professors*. Students who enter in the fall semester must first attend the series of faculty research talks given early in the semester. In addition, each student must also visit with all the untenured professors in the division(s) in which s/he is interested [distributed on separate sheet], and obtain their signatures to document the visits.

The individual meetings should occur as soon as possible after the faculty research talks, and must be **completed and the signed form returned before the third Wednesday in October for the Fall and by the third Wednesday in March for the Spring.**

Analytical Division:

C L BLANK	2967	121 CHBA	_____
G DRYHURST	4811	208 CHB	_____
R W TAYLOR	3820	312 CHB	_____
R LWHITE	4806	331A PHSC	_____

Biochemistry Division:

P COOK	4581	219B PHSC	_____
P E KLEBBA	4969	130Q PHSC	_____
B A ROE	4912	311 CHB	_____
V RYBENKOV	1677	130B PHSC	_____
A H WEST	1529	219F PHSC	_____
H ZGURSKAYA	1678	130C PHSC	_____

Inorganic Division:

M T ASHBY	2924	326A PHSC	_____
R P HOUSER	3551	302A PHSC	_____
G RICHTER-ADDO	6401	110 CHB	_____

Organic Division:

R F CHICHEWICZ	6969	217 CHBA	_____
D T GLATZHOFFER	3834	302B PHSC	_____
R L HALTERMAN	4836	436 PHSC	_____
D J NELSON	2288	308 PHSC	_____
K M NICHOLAS	3696	219 CHBA	_____
V A SOLOSHONOK	8279	315 PHSC	_____

Physical Division:

R E FRECH	3831	330D PHSC	_____
C V RICE	5831	B11 CHBA	_____
R A WHEELER	3502	112 CHB	_____
W T YIP	2054	413 PHSC	_____

Chemical Education:

M R ABRAHAM	4981	109 CHB	_____
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Non/Multi-Divisional:

C B MAO	4385	311 CHB	_____
S SCHROEDER	3092	111 CHB	_____

After visiting with the above Professors, I wish to submit the following preferences, with the scales of preference indicated (from 1 to 5, 1 being the highest):

Student's name: _____ Signature: _____

Division chosen: _____ Date: _____

1st Preference: Professor _____ Preference scale = _____

2nd Preference: Professor _____ Preference scale = _____

3rd Preference: Professor _____ Preference scale = _____

Your choice will be reviewed by the Graduate Committee prior to final selection of a Major Professor in accord with current Departmental policy. If you wish to comment upon your reason(s) for selecting a particular professor(s) you may do so in writing on a single additional page attached to this form.

Appendix B

DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY GRADUATE STUDENT ANNUAL PROGRESS REPORT

PH.D. DEGREE

Name: _____

Date: _____

INFORMATION REQUIRED OF ALL STUDENTS

- A. UPDATE THE ATTACHED 3-PAGE GRADUATE STUDENT DATA FORMS AND RETURN WITH THE REQUIRED REPORTS. ***Correct any errors and fill in any blank spaces using a red pen or red pencil.***
- B. Courses Remaining: List the additional lecture courses you must take with the dates you plan to take them. Include current enrollment. (Omit research, independent study, divisional seminars and departmental colloquium.) Attach additional pages if required.

Course Number	Date	Course Number	Date	Course Number	Date
Course Number	Date	Course Number	Date	Course Number	Date
Course Number	Date	Course Number	Date	Course Number	Date

CANDIDATES FOR THE Ph.D.

- A. Update your attached GENERAL EXAMINATION FORM for your SPECIFIC DIVISION (If you have completed the general exam requirement, go to B.)
 1. If you have not yet completed your general examination, write the date you intend to complete it in the space provided. Leave the remainder of the form blank. If the projected completion date is later than the divisionally required date, be sure to address this in your progress letter.
 2. If you have completed your general examination, make any corrections or additions directly on the GENERAL EXAMINATION FORM.
- B. ATTACH THE GENERAL EXAMINATION FORM TO THE 3-PAGE DATA FORMS AND ATTACH TO THE TWO REQUIRED REPORTS.
- C. ATTACH A ONE TO TWO PAGE SYNOPSIS OF YOUR PROGRESS, EMPHASIZING RESEARCH PROGRESS, SIGNED BY YOU AND ENDORSED BY YOUR RESEARCH PROFESSOR.
- D. ATTACH AN EVALUATION OF YOUR PROGRESS WRITTEN BY YOUR MAJOR PROFESSOR. This evaluation must include comment on coursework, research progress and other items, if applicable. It should also include a projected date for the completion of degree requirements. **All members of your Advisory Committee must sign the evaluation.** The Advisory Committee must meet with you in order to review the contents of this report, which, along with all the above documents, will be forwarded to the Graduate Committee.

FIRST YEAR STUDENTS, ATTACH A COPY OF THE "REPORT OF THE ADVISORY CONFERENCE." {NOTE: YOU must take signed original to Graduate College after it is checked/approved by Ms. Carol Jones in Chemistry Office}.