



# **Graduate Student Handbook**

**2022-2023**

The information contained in this document supersedes all previous versions and applies to the academic year 2022 - 2023. It is accurate and current, to the best of our knowledge, as of August 2022.

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- *Most of your questions regarding the policies and procedures of the Graduate Program will be addressed to the Graduate Subcommittee Chair (Dr. Silvaggi) and/or the Graduate Coordinator (Ms. Nicks).*
- *The Academic Department Manager handles all building-related questions and problems (e.g. if you notice a leak or if your fume hood is not functioning properly).*
- *Questions regarding ordering materials/supplies for research should be addressed to the Purchasing Agent (Ms. Hagen).*
- *The Administrative Assistant (Ms. Grober) will handle payroll-related questions.*

## INTRODUCTION

Dear Entering Graduate Student:

Welcome to the Graduate Program in the Department of Chemistry & Biochemistry at the University of Wisconsin–Milwaukee. I am confident that you will find the Department a great place to work, study, and perform cutting-edge research, and that the time spent in our graduate program will benefit you throughout your professional career. The focus of your graduate study will be a research program supervised by one of the Faculty in the Department. However, as in all organizations, there are rules and procedures to follow, partly to ensure that everyone is treated fairly and partly to ensure that high standards are maintained in the program.

This handbook is the product of many authors who have fine-tuned and updated its content over the years and includes many changes proposed by the Graduate Student Council. It attempts to outline the procedures that you will have to follow to successfully complete your advanced degree and identify resources provided by the Department and the Graduate School to help you along the way. Note that the Graduate School has additional regulations that you will need to follow as well as additional resources. These are currently (Fall 2020) organized into “toolboxes” for the Ph.D. (<https://uwm.edu/graduateschool/doctoral-toolbox/>) and Masters (<https://uwm.edu/graduateschool/masters-toolbox/>) programs that can be found on the Graduate School web site, under the “Current Students” tab in the navigation bar.

If you have any suggestions for modifications or clarifications, you are encouraged to contact the Graduate Student Council or the Graduate Program Coordinator, Ms. Elise Nicks. Elise is typically your first point of contact for general questions. She will handle the processing of all forms relating to the program and can answer most questions about program policies and procedures.

The general rules and information in this handbook will serve you as a “road map” through your advanced degree, summarizing the policies and procedures that were in effect for the academic year printed on the front cover. These rules will generally stay the same over time but may evolve in various ways. Therefore, you should not consider this handbook as a contract. You will be notified of any changes as they occur. Minor policy changes may become effective immediately, while for major policy changes, students will usually be allowed to work toward their graduate degree under the policies that were in effect when they were admitted. The Graduate Subcommittee and the Department Chairperson will consider cases where a specific change in

policy would create undue hardship for a student on a case-by-case basis.

The entire Faculty and staff of the Department wish you every success in your journey toward a graduate degree – it will be a time of profound professional and personal development, full of the rewards and sacrifices of intense research activity, which we hope you will look back upon with pride.

Sincerely yours,



Nicholas R. Silvaggi  
Chair of the Graduate Subcommittee  
Department of Chemistry & Biochemistry

## 1 GENERAL DEPARTMENT POLICIES

The Department provides an extensive orientation for all new students entering the program. A detailed schedule is provided to students well before they are due to arrive on campus, and each student is expected to attend *all* portions of the program. The program includes a general introduction to the program with tours of some of the core equipment facilities available for research, a meeting with the Graduate Advising Subcommittee, the five placement exams, TA orientation and training, and faculty research presentations.

### 1.1 Chemistry Graduate Program Milestones

Over the past 10 years, the Department has implemented and refined a system of “Milestones” designed to keep students on track and prevent unpleasant surprises as students seek to finish their degree. The Milestones system is built around the annual Milestones Meetings, where the student meets with their Thesis Committee to discuss both their progress through the program (*e.g.* coursework, teaching, and exams) and, most importantly, their research project(s). Most students join a research group at the beginning of their second semester in the program. By the end of that second semester, the student and their Thesis Advisor should assemble the Thesis Committee. **Students are responsible for convening their Thesis Committee for a Milestones Meeting each year.** This means that before their third semester begins, students must have held their first Milestones Meeting. Subsequent meetings will be held each year close to the anniversary of the first one (within a few weeks). See Appendix A for a detailed list of milestones and Appendix B for a condensed checklist so that students can keep track of their progress. ***If a student fails to meet any of the milestones, then they will no longer be in “good academic standing” in the Department. The ramifications of this range from reduction of the student’s Chancellor’s Graduate Student Award amount to removal from the Graduate Program in Chemistry.***

### 1.2 Entrance Examinations

All entering graduate students must take entrance examinations in analytical chemistry, biochemistry, inorganic chemistry, organic chemistry and physical chemistry. These exams are intended to measure your ability to perform at the bachelor’s degree level in each of these five disciplines. For M.S. students these exams are used for advising only, while Ph.D. students are required to pass at least four of the five exams with score in the 50th percentile or better.

To satisfy the entrance exam requirement for the Ph.D. program, you may re-take any failed



exam(s) multiple times until you obtain a passing score. The exams are given three times a year, at the beginning of the fall and spring semesters as well as the summer term. The exam schedule will be announced via email prior to their administration.

You are expected to have passed the required number of exams by the beginning of your fourth semester to remain in “good academic standing” within the Department. In addition, you may not advance to dissertator status (which should occur at the end of your third year) until you have fulfilled this exam requirement. It is your responsibility to register for courses and/or study textbooks to fulfill this requirement. Your Thesis Advisor will be able to help you identify textbooks and other resources to help you.

### 1.3 **Advising for Incoming Students**

The courses that you take during your first semester will be developed in consultation with the Graduate Advising Subcommittee. This committee will serve as your “surrogate” Thesis Advisor until you have been approved to join a Faculty member’s research group during your second semester. You will meet with this committee during orientation, after completing the Entrance Examinations, to determine the curriculum that will best meet your needs at this point in your graduate education. This may include courses that are necessary to make up for academic deficiencies. For example, if you graduated from a program that did not include an upper-level course in inorganic chemistry, you may be required to take CHEM-511 “Advanced Inorganic Chemistry”. You should be aware that if you enter the program with academic deficiencies, you must address those in the manner recommended by the Graduate Advising Subcommittee. Failure to do so will immediately remove you from “good academic standing” status and jeopardize your eligibility for continued Teaching Assistant (TA) support. Incoming students are required to register for the coursework recommended by the Graduate Advising Subcommittee in the first semester and are required to provide their class schedule to the Course Scheduler for scheduling TA assignments. Subsequent semester enrollment is decided between the student and Thesis Advisor with the advice of their Thesis Committee.

### 1.4 **Teaching Assistantship: Training and Orientation**

Any entering student who is accepting a TA position must attend both the Departmental and University-wide TA orientation programs designed to acquaint new graduate students with their professional responsibilities and duties. Familiarization with facilities and specific aspects of the UWM undergraduate curriculum, as well as philosophical and professional aspects of the teaching program, will be reviewed. The final session of the program will be a meeting with professors for

whom you will teach during your first assignment.

### 1.5 **Criteria for Continued TA Support**

A graduate student in the Chemistry & Biochemistry Graduate Program will be offered full TA support only if he or she is determined to be in “good academic standing” in the Department. Good academic standing is defined as:

- Satisfactory academic performance (minimum GPA for all courses  $\geq 3.0$ )
- English language skills sufficient for effective teaching (see Section 1.6)
- Satisfactory progress in research, as determined by the student’s Thesis Advisor and Committee
- Successful and timely completion of all program requirements (*i.e.* the Chemistry Graduate Program Milestones, see section 1.1 and Appendix A).

Graduate students in the Department of Chemistry & Biochemistry will be limited to a total of *five (5) years* of TA support (10 semesters, excluding summers).

### 1.6 **Disciplinary Policy for Teaching Assistants**

Disciplinary action will ensue if a TA fails to follow the Department of Chemistry and Biochemistry Work Rules for Teaching Assistants, to follow the directives and policies of the course instructor or to enforce safety regulations in the laboratory. This disciplinary action can take the form of a verbal reprimand, a written reprimand, suspension without pay, or dismissal. The level of the sanction will depend up on the seriousness of the infraction, and repeated infractions (even if relatively minor) will lead to more severe consequences. Records of the disciplinary action will be recorded in the TA’s personnel file. Such information will be reviewed prior to making subsequent Chancellor’s Graduate Student Awards or teaching assignments. Students with a record of disciplinary action will see his or her Chancellor’s Graduate Student Award decreased or discontinued. The Department will not offer a TA position to a student with a record of serious/repeated disciplinary actions.

Verbal and written reprimands may be imposed by the course instructor following an investigatory meeting. The student may file a grievance with the Undergraduate/Appeals Subcommittee of Chemistry and Biochemistry within 10 working days of the reprimand.

### 1.7 Language Competency Requirements

In addition to the Departmental Orientation, international students are required to attend an international student TA orientation held at the beginning of each semester. International students who do not score at least 23 on **speaking section** the TOEFL (or at least 7.0 on the IELTS) exam should also be aware that TA support depends on displaying sufficient English competency, demonstrated by passing a MITAA language test upon their arrival and prior to the start of classes. (Note that the MITAA test is in addition to any language proficiency tests such as TOEFL and IELTS required for admission into the graduate program.)

### 1.8 Selection of Thesis Advisor

Selecting a Thesis Advisor (i.e., your research advisor) is one of the most important decisions made by a graduate student. To this end, the following procedure will be followed:

- i. There will be a series of Faculty research talks for incoming graduate students during orientation week. It is imperative that you attend these presentations because they provide an important opportunity for you to become aware of the full range of research being carried out in the Department.
- ii. You will be issued a form at the end of these research talks for you to list three (3) research groups in which you would like to spend a period of time (“rotate”) during the first semester of your graduate program. Return the completed form to the Graduate Program Coordinator within one week after the orientation period. The completed form will be checked by the Chair of the Graduate Subcommittee and the Faculty will be notified. After your selection has been approved, you will be issued a second form that must be signed at the end of each rotation by the corresponding Faculty member.
- iii. Each rotation will last approximately four (4) weeks. The exact nature of the rotation is left to the discretion of the Faculty (e.g., attending Group Meetings, conducting a limited research project, study of the chemical literature); you will need to contact the Faculty member overseeing each rotation to establish the requirements for satisfactory completion. At the end of each rotation, make sure to obtain the Faculty member’s signature attesting satisfactory completion of your rotation.
- iv. When you have returned the signed form attesting your satisfactory completion of all rotations, you will be issued a third form in which you will list two research groups that you would like to join, in order of preference. Return this form to the Graduate Program Coordinator at the end of the semester. These choices do not necessarily have to be one of

the three groups that you were doing rotations with. *Note: You may choose more than three groups and continue your rotations during the following semester; however, this is not recommended because it will delay the start of research towards your graduate degree.*

- v. The entire Faculty will review your selections and assign a research group to you based upon your preferences. While every effort will be made to assign you to your first-choice research group, you should be aware that this is not guaranteed (e.g., the group's capacity and funding status bear upon this decision). Note that because TA support is requested by the Faculty on your behalf, failure to successfully complete these requirements may jeopardize your eligibility for TA support.

### 1.9 **Change of Major Research Professor**

In exceptional circumstances, you may find that you wish to change your research advisor at some point. Request this change by memorandum to the Graduate Subcommittee Chairperson. Outline the change that you wish to make, including reasons for the change, and forward the memorandum to the Graduate Program Coordinator, your previous advisor and the future advisor. The Graduate Subcommittee will consider your request and forward their recommendation to the Faculty for discussion and final decision.

### 1.10 **Credits and Courses**

The Graduate School requires a minimum credit load of 6 credits per semester for all TAs and RAs that have an appointment of 33% or greater. However, all graduate students are strongly encouraged to take research or audit credits up to the Graduate School's maximum of 12 per semester. (The Graduate School specifies that an RA should be registered for a full credit load *each* term.) Note that there are reduced credit requirements for the Ph.D. student who has achieved Dissertator status (see Section 2.5.4). Also, the Department will accept a minimum of six credits including seminar for M.S. students who have already met or exceeded the 30-credit degree requirement during the previous term and have one credit of research during the summer.

### 1.11 **Part-time Graduate Students**

Modifications of requirements and timetables may be made to accommodate special problems that might arise for part-time graduate students. These include the following:

- i. Part-time students must take entrance exams promptly, but scheduling may be flexible.

- ii. The Thesis Advisor should be chosen before the completion of 12 credits or four semesters of study (whichever is soonest).
- iii. In lieu of regular attendance at Graduate Seminars (if this is impossible because of other employment), the student may present two seminars; the second one can be in an area of research associated with the outside employment or thesis work. The student needs to request permission from both the Graduate Seminar coordinator and the Graduate Subcommittee on a semester-by-semester basis.
- iv. The rate of progress should at least average one course per semester, or its research equivalent. (Note that the Graduate School places a limit of 5 years on the
- v. M.S. degree and 10 years on the Ph.D. degree.)
- vi. Thesis research may be performed off-campus (*i.e.*, in laboratories where the student is employed). Certain restrictions must be observed: the work must be freely publishable and be carried out under direct and active supervision of a Faculty member of the Department. The thesis should state in specifically which research was done off-campus. Any service work performed by technicians or others at the student's place of employment must be clearly identified in the thesis. Although such service work is desirable in so far as it increases the student's productivity, it should be considered an "addition" to the student's personal research efforts, and not a replacement for it. The research must still be conducted by the student.
- vii. Graduate School requirements prevent the Ph.D. degree from being granted *entirely for part-time study*. One year of *full-time study beyond the M.S. level is required* to satisfy the residence requirement (see Section 2.3.3).
- viii. The Graduate Admissions Subcommittee may require that you identify a Thesis Advisor who is willing to supervise your graduate program on a part-time basis. It may also require that you design a program of study in conjunction with your prospective Thesis Advisor to ensure that you have a coherent and feasible plan for successfully completing a graduate program in a timely fashion.

### 1.12 **Graduate School Deadlines**

Under extenuating circumstances, the Graduate School deadlines may be extended. Special appeal forms are available for that purpose from the Graduate School. Consult with your Thesis Advisor if you need to request an extension.

### 1.13 **Research Notebooks**

Each student should maintain a carefully documented research notebook. The notebook and other related research materials remain the property of the Thesis Advisor and must be left with him/her when you leave the University. If you wish to retain a copy, you should make arrangements with your Thesis Advisor. It is strongly recommended to consult the American Chemical Society's *Writing the Laboratory Notebook* (1985) by Howard M. Kanare and *The ACS Style Guide* (2006) by Anne M. Coghill and Lorrin R. Garson (Eds.) for reference.

### 1.14 **Safety**

Safety should be one of your primary concerns. Specific safety practices are described in the Chemical Hygiene Plan and in the American Chemical Society publication *Safety in Academic Chemistry Laboratories* (you will receive a copy). *If you do not completely understand all of the requirements, see a member of the Safety Subcommittee and/or your Thesis Advisor.* All students are required to attend a "Safety Briefing" each year – this is an opportune time to ask questions!

### 1.15 **Security**

You will be able to complete your research only if the excellent facilities made available to you are kept secure. The Research Tower houses millions of dollars' worth of irreplaceable equipment that is subject to theft and vandalism. Your own personal safety is also of major concern. Several personal computers and laptops are stolen every year, with the consequent loss of valuable data, so please lock the doors to your offices and labs when nobody is inside.

The Campus Police and Student Services provide escorts for students in the evenings. They can be contacted in an emergency from any campus phone by dialing 9-911 or by calling (414) 229-9911 from a cell phone. For non-emergencies, call (414) 229-4627. Because graduate students commonly work in the evenings and on weekends, it is especially important that the building remain locked for safety as well as security. Graduate students are given keys so that they can perform research in an unencumbered environment. With the privilege of 24-hour access comes your responsibility to ensure that the building remains secure.

### 1.16 **What to Do If You Have a Question, Problem, or Grievance**

During your graduate studies at UWM, we hope (and expect) that most things will run fairly smoothly. However, there will always be times when unexpected problems arise, or you have

questions about the program requirements and/or policies. In these cases, it is important to know whom to approach.

*For routine, day-to-day questions:*

- **Department Administrator:** The Department Administrator is responsible overall operations of the business office and is also oversees facility maintenance and generally keeping things running smoothly. If you find problems with the physical building (a leak, dead electrical outlets or data jacks, broken elevator), you should immediately (1) let your Thesis Advisor know and (2) contact the Department Administrator (blackbuk@uwm.edu).
- **Graduate Coordinator:** If you have routine questions about the various forms and that you will need to file with the Graduate School and their associated deadlines, you should (1) check the appropriate “toolbox” on the Graduate School web site (<http://www.uwm.edu/graduateschool>; choose “Doctoral” or “Master’s” from the drop-down menu as appropriate) and (2) contact the Graduate Coordinator (chem-gradcoord@uwm.edu).
- **Purchasing Agent:** If you need help placing an order for laboratory supplies or you need to send out a package (e.g. sending samples to a collaborator or sending equipment back to the manufacturer for repair), contact the Purchasing Agent (chem-purchasing@uwm.edu).
- **Administrative Assistant:** Only contact the administrative assistant if you have a payroll-related problem, such as you are two months into your TA appointment, and you yet to receive a paycheck, or you have questions about TA/RA benefits.

For more involved questions about your academic program, your progress through the Milestones system (see Appendix A), serious problems that might affect your progress to the degree, or grievances, **you must first approach your Thesis Advisor**. If necessary, your Thesis Advisor will refer you to the Graduate Subcommittee Chair. If your problem involves your Thesis Advisor, then you should take it directly to the Graduate Subcommittee Chair. Depending on the nature of the inquiry, the Graduate Subcommittee Chair might need to bring the issue to the Graduate Subcommittee. For serious issues, like grievances, the Graduate Subcommittee will make a recommendation to the Department Chair who will then either decide the issue or refer it up to the L&S Administration.

## 2 THE PH.D. PROGRAM

The following is an outline of a typical course of study in the Ph.D. program. General rules are explained in the first part, and the program is set out in chronological order in the second part. This guide is designed to assist you in planning your program so that you can complete your course of study in a timely manner.

### 2.1 Program Requirements

For the purposes of tracking progress through the program, there are **two** stages that a Ph.D. candidate will pass through. The boundary between these stages is the **Preliminary Comprehensive Exam** (PCE; see below). Before passing this exam, students are classified as *Doctoral*, and after passing the PCE, they achieve *Dissertator* status. For the purposes of determining graduate student stipends, however, there are **three** classifications (see excerpt from the Graduate School web site below). The *Doctoral* status is somewhat incongruously split into *Non-doctoral* and *Doctoral* classifications. The difference between the two is that the *Non-doctoral* status is for students who have not earned at least 24 credits in the program (the Chemistry program does not require a M.S. degree for incoming students). Small pay increases are associated with each succeeding classification; as of this writing, the current pay scale can be found at <https://uwm.edu/graduateschool/graduate-assistant-policies-procedures>.

*From the Graduate School web site (<https://uwm.edu/graduateschool/graduate-assistant-policies-procedures>):*

#### **Pay Scale Classifications**

The following pay scale classifications and definitions apply to Teaching Assistants only:

##### ***Non-doctoral***

A student in a master's program, or a graduate non-degree student, or a doctoral student who does not hold a master's degree and who has completed fewer than 24 credits of graduate work toward the degree.

##### ***Doctoral***

A student in a doctoral program who holds a master's degree. If the doctoral program does not require a master's degree, a student must complete at least 24 graduate credits in the program to advance to the doctoral pay classification.

##### ***Dissertator***

A graduate student in a PhD program who has achieved dissertator status.



A Ph.D. student will fulfill the following general requirements, which are described in more detail below:

- Graduate Seminar; see Section 2.2
- Advanced Seminar (e.g., group meeting); see Section 2.3
- Annual Milestone Meetings; see Section 2.4 and Appendix A
- Coursework (at least six graduate courses); see Section 2.3
- Satisfactory completion of the Entrance Examinations; see Section 1.2
- **Advanced Qualifying Exam (AQE)**; see Section 2.4
- **Preliminary Comprehensive Exam (PCE, commonly known as “Orals”)**; see Section 2.5.3
- Completion of original research project
- Thesis defense; see Section 2.5.5

## 2.2 **Graduate Seminar (CHEM 912)**

All full-time graduate students must register for the Graduate Seminar (CHEM 912) each semester. Before receiving the Ph.D. or M.S. degree, you must present at least *two* seminars (or equivalent; see below). The seminar requirement is defined as follows:

- i. The first seminar is a CHEM 912 seminar and is *not directly related* to the student's area of research. The topic is selected in consultation with the student's Thesis Advisor and then approved by the student's Division (electronic approval, *i.e.* e-mail, will suffice; there is no official form). The topic of the seminar must be approved by *all* the student's divisional faculty before the start of the semester in which the seminar is to be presented. This requirement must be completed by the fourth semester of the student's program in order to remain in good standing in the Department (see the Graduate Student Milestones Checklist, Appendix A).
- ii. The second seminar is a presentation by the student at a regional or national meeting.

Registration for CHEM-912 is required for all graduate students in both the fall and spring semesters, but whether a student registers for audit or credit depends on whether they are presenting their seminar that semester. Inaccurate registration may pose difficulties in meeting seminar requirements:

- For semesters in which you are not presenting a seminar, register for one credit, *audit*.
- For the semester in which you do present a seminar, register for one credit, *graded*.

An important part of the Graduate Seminar series (CHEM 912) are colloquia that feature

invited speakers from other universities, government agencies, and private companies periodically throughout the year. These colloquia are typically held at the same time as the Graduate Seminars, i.e., at 3:00 p.m. on Fridays, and usually with refreshments and an opportunity to also informally meet the speaker. During the COVID-19 pandemic, these colloquia may be held virtually. The CHEM 912 syllabus will have more information. In addition to our Departmental colloquia, notices of seminars in other departments at UWM or nearby schools (*e.g.* Marquette, MCW, or Concordia) will be posted in the building and/or circulated via e-mail.

### 2.3 **Advanced Seminar (CHEM 93X)**

Once you have formally joined a faculty research group, you should register each semester for the appropriate divisional “Advanced Seminar” for one credit:

- CHEM-931: Analytical Chemistry
- CHEM-932: Biochemistry
- CHEM-933: Inorganic Chemistry
- CHEM-934: Organic Chemistry
- CHEM-935: Physical Chemistry
- CHEM-936: Chemical Education

The content of these seminars is up to the discretion of the individual faculty members, but typically they include discussions of current research results and important new developments in the field, usually with all lab members present. This will normally take the form of the periodic meeting (*e.g.*, weekly) of the research group.

### 2.4 **Annual Milestone Meetings**

Each graduate student must form their Thesis Committee within the first year and must schedule meetings with this committee every other semester to discuss progress in research, teaching, and coursework. Put another way, students beginning the program in the Fall (September) should have a Milestone Meeting *each* year before the end of August. Students who begin in the spring (January) should schedule their meetings by the end of the December each year. Prior to the annual Milestone Meeting the student will update their Milestones Checklist (Appendix A) with the help of the Graduate Coordinator. The official copy will be kept by the Graduate Coordinator in each student’s file, but students are encouraged to keep their own unofficial copy. The official Milestones Checklist should be brought to the meeting to obtain the signatures of the Thesis Committee. Students should arrange with the Graduate Coordinator in

advance to have their file available at the meeting. At the meeting the student will present a synopsis of current progress through the program, discuss current research results, and strategize about the future direction(s) of the project(s) with the Committee. The Thesis Committee will become a continuing resource to the student and advisor, supplying additional ideas to improve the research output of the Department.

The Committee will also discuss any deficiencies in maintaining good standing of the student in the graduate program. If the student fails to meet any of the requirements, he or she is automatically placed on probation and must meet with their committee again in the subsequent semester (*i.e.* before 6 months have elapsed).

## 2.5 **Credit and Residence Requirements**

The Graduate School requires a **minimum of 54 graduate credits beyond the bachelor's degree**. In addition to this credit requirement, you must also fulfill two residence requirements before you can achieve dissertator status. The residence requirements are satisfied by (a) completing at least 27 graduate credits at UWM as a Ph.D. student, and (b) by completing 8 to 12 graduate credits in each of two consecutive semesters, or 6 or more graduate credits in each of three consecutive semesters. *Note: Credits taken during the summer session are not counted under this requirement.*

You may be eligible to register for only one credit during the semester in which you prepare for the **Preliminary Comprehensive Examination**. International students should check with the Center for International Education for more information and to ensure that they do not run afoul of Visa requirements. You can obtain a form from the Graduate School requesting this reduced credit load. Course requirements per division are detailed in Section 2.11.

## 2.6 **Quality of Coursework & Repeating Courses**

According to Graduate School requirements, all graduate students must maintain a 3.0 grade point average (GPA) in all coursework. You may repeat a course once in which a grade of B- or lower was received. Both grades remain in the permanent record and are used in calculating the official graduate GPA, but the credits for the course count only *once* toward meeting credit requirements. In some instances, it may be advisable to repeat one of the basic graduate courses if a low grade has been received.

## 2.7 **Time Limits**

If you do not perform any graduate work for a period of five *consecutive* years, it is Graduate

School policy that you lose *all credit* toward your degree. The Graduate School has established additional specific time limits for the M.S. and Ph.D. degrees. Note that for the Ph.D., the limit is ten (10) years. A student will be removed from the graduate program without appeal if they do not graduate within this period. For a M.S. student, the Graduate School time limit is five (5) years.

## 2.8 Grades Issued for Research

Graduate students in the Ph.D. Program receive a grade of S (satisfactory progress) or U (unsatisfactory progress) for research credits (CHEM 99X). These grades will not be included in the GPA calculation, nor will they appear on an official transcript. Graduate Students in the M.S. program will receive a letter grade (A, B, C, etc.) for research credits.

## 2.9 Summer Appointments

You may be given a summer appointment as available. Registering for credit during the summer depends on many factors; please contact the Graduate Student Coordinator for the proper summer registration details that apply to your case.

## 2.10 Changing from Ph.D. to M.S. Program

No Ph.D. student who wishes to change from the Ph.D. program to the M.S. program will be provided with TA support *without* a positive recommendation from the student's current Thesis Advisor and the explicit permission of the Graduate Subcommittee. All entering graduate students are assumed to be in the Ph.D. program *unless formally indicated by the student upon admission* to the Graduate Program.

## 2.11 Coursework Requirements

The coursework requirements for the Chemistry Ph.D. program are very flexible, with the only rigid requirement being that the student earn a total of 18 credits in graduate-level courses (*i.e.* six courses at 600-level or above). The choice of courses is left entirely to the Thesis Advisor with the concurrence of the Thesis Committee. This facilitates the creation of an interdisciplinary program of courses tailored to the student's goals and interests. If a student has taken any of the core courses for their division as an undergraduate, they should work with their Thesis Advisor and Thesis Committee to identify alternative courses that fit the needs of their thesis research. Additional course selection policies for each Division are summarized below.

### 2.11.1 **Analytical Chemistry**

The following courses are required for all Chemistry Ph.D. candidates who are specializing in Analytical Chemistry:

- CHEM 724 (Electrochemistry)
- CHEM 726 (Separations)
- CHEM 726 (Special Topics)

In addition to these core courses, an additional three courses (9 credits, 600-level and above) area are required. These courses will be tailored to the needs of the student and approved by the student's Thesis Advisor. The three additional courses can come from any division and need not be related to each other. In other words, an Analytical Chemistry student could take a biochemistry course and two inorganic courses. The composition of the coursework is up to the Thesis Advisor and the Thesis Committee.

In the Analytical Division, the **Advanced Qualifying Examination** consists of a series of monthly examinations based on contemporary analytical literature. Each exam comprises both an oral component, in which the student critiques an assigned journal article, and a written component focused on the fundamental aspects of the analytical approach and methodology employed in the article. Students are required to obtain a passing score on three of the six exams that are administered. There will be no opportunity to re-take exams. If a student does not pass at least three of the six exams, they will be transitioned to a terminal M.S. degree.

### 2.11.2 **Biochemistry**

Three core courses in the area of Biochemistry are required, including:

- CHEM 601 (Biochemistry: Protein Structure and Function)
- CHEM 602 (Biochemistry: Cellular Processes)
- CHEM 604 (Biochemistry: Metabolism)

All three of these courses should be completed before taking the **Advanced Qualifying Examination** and at least three more must be completed as partial satisfaction of the Ph.D. degree requirements. While it is generally advisable to complete the coursework before taking the AQE, it is possible to take AQE before all three courses are completed. Since the Biochemistry division usually offers the AQE once per year, in August, taking the exam before finishing all the courses will maximize the number of attempts the student can make. *Note:*

The Biochemistry AQE is not exclusively offered in August; if one or more students express a need/desire for a fall or winter sitting of the AQE, the Biochemistry division may accommodate the student(s). The additional courses must carry graduate credit (600-level and above) and should be tailored to the needs of the student. and approved by the student's Thesis Advisor. If a student has previously taken one or more of CHEM-601, CHEM-602 and CHEM-604 as an undergraduate student, appropriate courses for substitution include: CHEM-701 (Topics in Biochemistry), CHEM-781 (Pulsed NMR Spectroscopy), CHEM-614 (Bioinorganic Chemistry), or CHEM-741 (Topics in Organic Chemistry – Bioorganic Chemistry).

The Biochemistry AQE consists of three exams given in the areas of Protein Structure and Function (CHEM-601), Cellular Processes (CHEM-602), and Metabolism (CHEM-604). Each exam occurs in a different week and one or more articles are provided one week before each exam. Each exam covers the provided article(s) as it relates to the area as well as material from the related course. Thus, you are expected to read and understand the article(s) thoroughly and to have taken related courses prior to taking the AQE. Generally, three attempts to pass the AQE are allowed.

### 2.11.3 **Chemical Education**

Three core courses in the area of Chemical Education are required, including:

- CHEM 7XX (Topics in Chemical Education)
- ED PSY 624 (Educational Statistical Methods I)
- ED PSY 631 (Cognition: Learning, Problem Solving and Thinking)

Additionally, ED PSY 724 (Educational Statistical Methods II) is also recommended to the core courses in Chemical Education listed above. In addition to the core courses, a minimum of three courses in Chemistry and Biochemistry carrying graduate credit (600-level and above) and tailored to the needs of the student are also required. These chemistry courses must be approved by the student's Thesis Advisor and Thesis Committee. As an example, a student may take the three core courses and, in addition, take Physical Inorganic (CHEM 611), Intermediate Chemical Thermodynamics (CHEM 661) and Chemical Kinetics and Dynamics (CHEM 662). Similarly, if a student were interested in teaching at an undergraduate institution where only general and organic chemistry courses are offered, a combination of graduate organic chemistry courses would be more appropriate (e.g. CHEM 640, CHEM 647, and CHEM 740). The core courses should be taken prior to a student taking the **Advanced Qualifying Examination**.

#### 2.11.4 **Inorganic Chemistry**

The three core courses in Inorganic Chemistry include:

- CHEM 611 (Physical Inorganic Chemistry)
- CHEM 612 (Transition Metal Chemistry)
- A Physical Chemistry/Physics course chosen in consultation with the Thesis Advisor and Committee

Three courses (minimum), carrying graduate credit and tailored to the needs of the student, are required in addition to the three core courses. These are typically Biochemistry or Organic Chemistry courses, however students concentrating on Physical Inorganic Chemistry might use Physical Chemistry, Physics, or Analytical Chemistry courses to fill out their coursework. Special Topics courses may count towards this requirement. The following example is one of many possible programs: Core courses: CHEM 611, CHEM 612, CHEM 767 (Basic Quantum Chemistry); Additional courses: Inorganic Mechanisms (Special Topics course, CHEM 711), Spectroscopy (CHEM 762), Statistical Thermodynamics (CHEM 765).

The Inorganic Division **Advanced Qualifying Exam** is comprised of three exams. They are:

- Exam 1: Spectroscopy and Bonding
- Exam 2: Kinetics and Thermodynamics
- Exam 3: Research Group Specific

Exams 1 and 2 are each based on two research articles, which will be given to the student a week ahead of the exam. The student will be allowed one day to complete the exam. Any materials/resources that the student may wish to use are allowed for these two exams. Exams 1 and 2 are given at different times, not on the same day. Exam 3 is specific to the research group; see your research advisor for complete details.

#### 2.11.5 **Organic Chemistry**

The Organic Chemistry Faculty has established the following guidelines for the minimum Ph.D. course work in the Division. Your Thesis Advisor may specify more detailed requirements for you:

- CHEM 640 (Advanced Survey of Organic Chemistry) or previous equivalent third semester courses in advanced organic chemistry
- Recommended courses for preparation for the Advanced Qualifying Examination and Preliminary Comprehensive Examination should be selected from:

- CHEM 740 (Advanced Organic Chemistry Methods in Synthetic Chemistry).
- CHEM 741 (Special Topics, such as Medicinal Chemistry, Organometallic Chemistry, Nanomaterials, Biomolecular Recognition, etc.)
- CHEM 748 (Physical Organic Chemistry)
- CHEM 647 (Physical Methods of Organic Chemistry)
- Other more “topical” courses

A minimum of six courses (eighteen graduate credits) are required, which must include CHEM 640 (**required**) and two of the courses from the list above. The remaining three courses can cover any area of chemistry that the Thesis Advisor and Thesis Committee will help prepare the student for their thesis work and beyond.

Students are qualified to take the **Advanced Qualifying Exam** only if they are determined to be in “good academic standing” in the Department. Each year, there are three AQEs, generally given at the end of February, June, and October. The exams will be written by all 6 organic faculty members (1 hour each/100 points each). The Thesis Advisor will pick four faculty members’ exams. The student will have four hours to complete the four exams. Students have three chances to take the AQE to obtain a passing score of 65%.

#### 2.11.6 **Physical Chemistry**

All graduate students earning a Ph.D. in Physical Chemistry must take at least seven courses. Amongst the seven, the four required core courses are:

- CHEM 661 (Intermediate Thermodynamics)
- CHEM 765 (Statistical Thermodynamics)
- CHEM 767 (Basic Quantum Chemistry)
- CHEM 662 (Chemical Kinetics and Reaction Dynamics)

Other courses, including the Surface Science sequence, will be agreed to by the student and his/her Thesis Advisor with the agreement of the Thesis Committee.

No separate **Advanced Qualifying Exam** is given in the Physical Chemistry Division; the AQE is considered to be achieved when all four core courses have been passed with a grade of B or better.



## 2.12 Recommended Course of Study

### 2.12.1 *First Year*

**First Semester:** You are required to take a minimum of two courses (six credits) in the first semester. If you feel capable of doing so, you may register for an additional course for a total of three courses. These are to be selected in consultation with the Graduate Advising Subcommittee, which meets with you during Orientation. Taking a third course during your first semester in the program is generally discouraged, since students will need to devote a significant portion of their time to TA duties and laboratory rotations. You will typically register for:

- Two courses (**six credits**)
- Graduate Seminar (CHEM 912; **one credit**, audit)

You will also be assigned teaching duties in the Undergraduate Program if you are supported on a TA (see Sections 1.4-1.7). If you enter the Department supported on a Research Assistantship (RA), then you should select the courses for your first semester in conjunction with the Faculty member who is sponsoring your RA. You must nevertheless meet with the Graduate Advising Subcommittee to apprise them of your status. By the end of this semester, you must have earned a minimum grade point average (GPA) of 3.0 and have selected a Thesis Advisor (see Section 1.7 and Appendix A).

**Second Semester:** You are required to re-take entrance exams at the beginning of this semester in areas for which you received a score of < 50<sup>th</sup> percentile on the first attempt. You will take a minimum of two courses during this semester, which are selected in consultation with your Thesis Advisor. Full-time (50%) TAs have to register for 6-12 credits, while RAs should register for 8-12 credits. Typically, you will register for the following courses this semester:

- Two courses (**six credits**)
- Graduate Seminar (**one credit**, audit, unless you are presenting a seminar this semester, in which case you would register for 1 credit, graded)
- Advanced Seminar (see Section 2.3; Division-specific course numbers from CHEM 931 to CHEM 936; select the correct one for your discipline; **one credit**)
- Independent Research (Division-specific course numbers from CHEM 990 to CHEM 996; Each faculty member has a different section number, so be sure to select the correct section number for your Thesis Advisor, **5 credits**)

You will typically have accumulated at least 18 credits by the end of this semester. The two CHEM 912 audit credits do not count toward your degree requirements. You are expected to move your office from CHEM 164 into your Thesis Advisor's space and formally embark on your research project during this semester. By the end of the semester, you must have maintained a GPA of 3.0 to maintain "good academic standing". In the course of the semester, you should discuss the completion of your course work with your Thesis Advisor.

During your second semester, your Thesis Advisor will assist you in the selection of your Thesis Committee (five members total, including your Thesis Advisor). The Committee members will serve as the examiners during your **Preliminary Comprehensive Exam** and **Final Thesis Defense**. At least two members shall be from outside your Division and one may be from outside the Department. **You must schedule the first annual Milestones Meeting with your Committee before the start of your third semester.** For students beginning their studies in the Fall semester, it is a good idea to schedule the Milestones meeting by the end of the second (*i.e.* the spring) semester. It can be difficult to convene the committee during the summer and giving the committee members advanced notice helps ensure that there is not an "August rush" where 20 students all try to have their Milestones meetings in the last week before the next Fall semester begins. For students who begin in the Spring semester, the Milestones meetings should be held during December or during Winter break (generally the first 3 weeks of January). With finals and Christmas in December and then potential vacations during January, this can also be a difficult period to schedule Milestones meetings. **Start early!** The first Milestones meeting (see Section 2.4) will focus primarily on your academic performance and teaching. You should be able to present some preliminary research results, or at least a coherent outline of your future research plans.

Summer: You are strongly encouraged to re-take entrance exams in the disciplines for which you received a score below the 50<sup>th</sup> percentile on the previous attempt(s). You should also have all of the core courses for your discipline completed, so this is the first opportunity to take the AQE for your Division. *If you do not hear anything about the AQE in the beginning of the summer, ask your Thesis Advisor when they will be offered!* The summer will also be your first opportunity to focus entirely (or almost so) on your research. It is expected that you will make some progress during this period. See Section 2.9 for enrollment requirements.

### 2.12.2 **Second Year**

First Semester: You are required to re-take entrance exams at the beginning of this semester in areas for which you received a score of < 50<sup>th</sup> percentile on the previous attempts.

You should also attempt to complete your course requirements in your third semester. This will normally entail taking:

- Two courses (**six credits**), selected with the advice of your Thesis Advisor and Committee
- Graduate Seminar (CHEM 912; **one credit**, graded during the semester you are presenting, otherwise audit)
- Advanced Seminar (CHEM 93X; **one credit**)
- Independent Research (CHEM 99X; **four credits**)

By the end of this semester, you must have achieved a minimum GPA of 3.0 in formal coursework and Graduate Seminar. You should have accumulated at least 28 credits (or 29 if you have presented your Graduate Seminar), which makes you eligible to change from the Non-doctoral to the Doctoral TA pay scale status. You must request this change in writing to your Graduate Program Coordinator. Your research program should be well underway at this juncture.

You are eligible to take the **Advanced Qualifying Exam** in your Division as long as you have satisfied residency requirements (Section 2.5). This exam **must be passed by the end of the fourth semester** to continue in the Ph.D. program and remain in “good academic standing”. The format of this examination is established by the Faculty in each Division — the requirements and format of the exam vary by Division (see Section 2.11). Passing the **Advanced Qualifying Exam** is required for admission to Ph.D. candidacy. Successfully passing this examination means that you are formally recognized by the Graduate School as a doctoral candidate. Several forms must be completed and signed by your Division before and after the completion of your **Advanced Qualifying Exam**. Please contact the Graduate Coordinator for submission requirements.

**Second Semester:** You are expected to have passed the required number of entrance exams by the beginning of this semester to remain in “good academic standing”. If this is not the case, you are required to re-take the entrance exams at the beginning of this semester in areas for which you received a score below the 50<sup>th</sup> percentile on the previous attempts (remember that the entrance exam requirement needs to be completed before you can advance to Dissertator status). You should also have presented your Graduate Seminary (CHEM 912, graded) by the end of this semester (*i.e.* present during the 3<sup>rd</sup> or 4<sup>th</sup> semester).

The second attempt at the **Advanced Qualifying Exam** (if necessary) must be made by the end of this year. Students who fail to pass the exam on the second attempt (or third attempt, depending on the Division) will be admitted to the M.S. program to **complete a terminal**

**master's degree** and should plan a curriculum that will allow for timely completion of the M.S. degree (see Section 3). *In other words, repeatedly failing AQE may result in your removal from the Ph.D. program.* Students in this situation must re-apply to the Graduate School for re-admission as a M.S. student.

Any other outstanding courses should be completed during this semester, while continuing to maintain an overall GPA of 3.0 or better. Typically, you will register for:

- Graduate Seminar (CHEM 912; **one credit**, graded during the semester you are presenting, otherwise audit)
- Advanced Seminar (CHEM 93X; **one credit**)
- Independent Research (CHEM 99X; **nine credits**)

Your research project should be accumulating data this point. You will need to schedule your second annual Milestone Meeting with your Thesis Committee toward the end of this semester, so that it can be convened before the start of the next term (i.e. in summer for students who began in the fall, or in December/January for those who began in the spring). This second Milestones Meeting will cover your academic and teaching performance, but it will focus more on your research progress and future plans.

### 2.12.3 **ThirdYear**

**First Semester:** Having passed the AQE, you will now be formally recognized as a Doctoral Candidate and register for:

- Graduate Seminar (CHEM 912; **one credit**, audit)
- Advanced Seminar (CHEM 93X; **one credit**)
- Independent Research (CHEM 99X; **nine credits**)

You will have accumulated approximately 49 credits (excluding any additional credits accumulated during the summer) by this stage.

**Second Semester.** You will continue to focus on your research and should register for

- Graduate Seminar (CHEM 912; **one credit**, audit)
- Advanced Seminar (CHEM 93X; **one credit**)
- Independent Research (CHEM 99X; **nine credits**)

You should plan to take the **Preliminary Comprehensive Exam** during this semester. This requires that you to have completed all entrance exam requirements and have passed the

AQE for your Division. The **Preliminary Comprehensive Exam** constitutes the “Preliminary Examination” requirement as stipulated by the Graduate School and will serve as your third annual Milestone Meeting with your Committee. You must formally apply to the Graduate School to take this examination by completing the electronic *Application for the Doctoral Preliminary Examination*, located in the online [Doctoral Milestones System](#). You may also request a reduced credit load of only one (1) credit during the semester in which you prepare for and take the **Preliminary Comprehensive Exam** (see Section 2.5).

Before convening your Committee for this examination, you must have a well-defined research problem and significant preliminary results. The **Preliminary Comprehensive Exam** focuses both on the work you have completed as well as on your plans for finishing your dissertation research over the course of the next 18-24 months. A short (~2 page) abstract of your presentation should be provided to the members of your Committee at least one week prior to the examination. Please consult with your Thesis Advisor for format requirements. This exam can be repeated until the student performs satisfactorily, at the Thesis Committee’s discretion. However, **this exam must be completed by the end of the third year to remain in “good academic standing”**.

#### 2.12.4 **Completion of the Ph.D.**

With the satisfaction of formal requirements, you are expected to concentrate fully on completion of your research project and deliver updates on research progress to your Committee during the annual Milestones Meetings. Students who have completed the **Preliminary Comprehensive Exam** requirement are eligible to apply for Dissertator status *after they have completed the credit and residence requirements* (see Section 2.5). In Dissertator status, **you must be registered for exactly three credits per term** (including summer). This will normally consist of:

- Graduate Seminar (CHEM 912; **one credit**, audit)
- Advanced Seminar (CHEM 93X; **one credit**)
- Independent Research (CHEM 99X; **two credits**)

Note that CHEM 912 does not count toward the Ph.D. degree requirements; the Advanced Seminar and Research credits give the required 3 credits. The regulations for Dissertator status are documented on the [Graduate School website](#) as follows (Section “Milestones of Doctoral Study: Dissertator Status (Doctoral Candidacy”):

“You are eligible to become a dissertator when you have:

1. *Completed all major and minor course requirements.*
2. *Passed the doctoral preliminary examination.*
3. *Submitted a dissertation topic summary or proposal hearing in the online Doctoral Milestones System.*
4. *Met residence requirements.*
5. *Cleared incomplete and "progress" grades/reports in non-research courses.*
6. *Achieved a 3.0 or higher cumulative GPA.*
7. *Completed the language requirement (if required).*
8. *Completed other departmental requirements (if any).*

You must submit an Application for Doctoral Dissertator Status, located in the online Doctoral Milestones System, for this information to be verified and approved by the Graduate School and your graduate program unit. You must submit the online form before the semester begins.

Your dissertator status is confirmed with an e-mail from the Graduate School doctoral specialist to you and your department's graduate representative.

### **Continuous Registration**

*Doctoral students with dissertator status must maintain continuous registration.*

A dissertator must register for 3 graduate-level dissertation or research credits (at the current per-credit dissertator rate) each semester until the dissertation is accepted by the Graduate School. During any summers in which you use University facilities or faculty time, are a fellow or research assistant, or plan to graduate, you must register for 3 graduate-level credits (dissertator rate) in the regular eight-week summer session. Three is the minimum (and the maximum) number of graduate credits required per semester.

*The Graduate School will monitor your registration every semester to be sure that you are registered properly. The Graduate School has the authority to remove you from dissertator status if you are not in compliance with dissertator regulations. The Graduate*

School will notify you and your program unit of dissertator status requirements and of any registration problems. If you do not maintain continuous registration, you will be placed in a default status.

*Default status: If you break the continuous registration requirement after attaining dissertator status, you will be assessed a completion (dissertator default) fee of 12 credits. After re-entry, the 12-credit completion fee is reduced by 3 credits per semester for each consecutive semester of enrollment. If you return for at least 4 consecutive semesters following a break in registration, the completion fee is not assessed.”*

#### 2.12.5 **Final Year(s)**

The student delivers a “Thesis Seminar” to the entire Department near the time of completion of the thesis, preferably in the regular Graduate Seminar time slot. This presentation may be combined with the **Preliminary Thesis Review** (*vide infra*), which should occur approximately six months before the **Final Thesis Defense**. Alternatively, the seminar may be combined with the **Final Thesis Defense**; this is what is most commonly done. In some instances, a Laboratory for Surface Studies seminar (or other presentation) may serve as the thesis seminar if it is clearly announced as such, is presented in a form appropriate to the entire Department, and is given at the time of the **Preliminary Thesis Review** or the **Final Thesis Defense**.

Prior to the completion of your dissertation, you should assemble your Thesis Committee for a **Preliminary Thesis Review**, more commonly referred to as the “**Predefense**”. This must be done no later than one month before the **Final Thesis Defense**, but it is strongly recommended to hold the **Preliminary Thesis Review** six months before the **Final Thesis Defense**. This will allow you sufficient time to make changes as directed by your Thesis Committee. The **Preliminary Thesis Review** is intended to be a review of the major points that will be included in your thesis. It is intended to avoid major re-writing after the **Final Thesis Defense** (hence the recommendation to have it 6 months before, when the thesis writing is just beginning) and is done entirely for the benefit of the student. The required abstract should be succinct and include the proposed chapter headings. It should *not* be a lengthy manuscript that describes your entire research project, but rather an outline of what you have accomplished and the final experiments you are planning in order to complete your research. *The Preliminary Thesis Review is neither an examination nor a “dress rehearsal” for your Final Thesis Defense.* Its function is to assist you in *focusing your ideas* for completion of your

dissertation and to allow your Thesis Committee to approve (a) the *overall structure* of your dissertation, and (b) the remaining laboratory work that must be completed prior to the ***Final Thesis Defense***.

**Final Semester**: You should plan to spend most of this semester writing your dissertation. Be aware that the time and effort involved in this task is *always* underestimated, so plan accordingly! You are required to provide copies of your dissertation to the members of your Thesis Committee **at least two weeks (14 days) prior to your Final Thesis Defense**. The format of your dissertation must comply with Graduate School guidelines, which are published on the [Graduate School website](#). Every spring and fall semester, the Graduate School holds a workshop (Dissertation Boot Camp) to help acquaint graduates-to-be with rules on formatting and submitting theses and dissertations, as well as the requirements for graduation. For more information on these workshops, check the “Current Graduate Students > Professional Development” section of the Graduate School website (<https://uwm.edu/graduateschool/professional-development/dissertation-boot-camp>).

### 2.13 **Steps for Completion of the Ph.D. Degree**

**Note:** You are advised to consult the “Dissertation Defense” and “Graduation” sections of the [Graduate School website](#) (<https://uwm.edu/graduateschool/doctoral-requirements/>) as specific procedures may change.

- i. No later than the second week of the semester during which you plan to graduate, you should complete and submit the online form entitled Application for Doctoral Graduation from the Forms section of the Doctoral Toolbox on the Graduate School website. This form will initiate a review of your records by the Graduate School, following which the Department will be asked to list the members of your Thesis Committee and the proposed date for the ***Final Thesis Defense***. In order to graduate in the semester you have applied for, the dissertation defense must be held **at least two weeks before the graduation ceremony date**. The Spring and Fall semesters are the best for scheduling defenses; scheduling during the summer may be very difficult.
- ii. You must also pay a non-refundable \$40 graduation processing fee, which will be billed by the Bursar's office during the semester. This need only be paid once. It will not be assessed a second time in the event that you do not graduate during the intended semester.
- iii. **Thesis Seminar:** You are required to present a public seminar (*i.e.*, advertised to the



Department) describing your thesis research. Note that the seminar may also be given as the “presentation” portion of the **Preliminary Thesis Review** (see Section 2.12.5).

- iv. When you have the dissertation assembled in rough draft, you are strongly encouraged to take a copy to the Graduate School for approval of the format. This is done by emailing the file to [gs-doctoralservices@uwm.edu](mailto:gs-doctoralservices@uwm.edu). This must be done before the formatting deadline. For example, the formatting deadline for graduation after the Fall 2020 term is November 20, 2020. These and other important Graduate School deadlines can be found at <https://uwm.edu/graduateschool/graduation-dates-deadlines/>. If you wait until your final draft to have the formatting checked, you may find that you need to make significant revisions!
- v. The **Final Thesis Defense** may not be undertaken *until all other requirements have been satisfied*. The warrant required for the final examination is sent to the Department by the Graduate School in response to a form initiated by the Department listing the Thesis Committee members. See the Graduate Coordinator well ahead of the graduation application deadline to get the paperwork started.
- vi. Present a copy of the completed thesis to the members of your Committee **at least two weeks** before the date of the Final Defense. Your Committee will tell you whether they prefer the document in hardcopy or electronic form.
- vii. After the examination, you should make all corrections recommended by the Thesis Committee. A signed copy printed on quality bond paper will be sent to the Graduate School, which, in turn, deposits it in the Golda Meir Library at UWM. An unbound copy is sent to the Department, and an additional copy will be hardbound for your Thesis Advisor. You may wish to have additional copies bound for yourself at the same time.
- viii. The completed dissertation (signed by your Thesis Advisor on the *Official Title Page*, on the *Abstract*, and on the *Vita Sheet*) must be submitted to the Graduate School by the posted [submission deadline](#). Dissertations received later than this will be accepted for graduation at the end of the *subsequent* semester and will require a new application for graduation.
- ix. At the time you submit your thesis electronically to the Graduate School through the [ProQuest ETD Administrator](#), you will also submit the forms [Survey of Earned Doctorates](#) and [Thesis & Dissertation Approval and Publishing Options Form](#) (with an original signature from you and your Thesis Advisor).

After you have successfully completed your Final Defense and before leaving the Department,

obtain a graduate student “Clearance” form (see Appendix C) from the Graduate Program Coordinator to indicate that you have cleared your laboratory, given the requisite number of copies of your thesis to the Department, returned your keys, and left a forwarding address. Failure to accomplish these actions will result in a “hold” on graduation and a “hold” on records for transcript purposes.

### 3 THE M.S. PROGRAM

The following is an outline of a typical course of study in the M.S. program. General rules are explained in the first part, and the program is set out in chronological order in the second part. This guide is designed to assist you in planning your program so that you can complete your course of study in a timely manner.

#### 3.1 Program Requirements

##### 3.1.1 *Summary*

A M.S. student will fulfill the following general requirements, which in many cases are the same as for Ph.D. students and are described in more detail in the sections indicated below:

- Coursework (at least five graduate courses); see Section 3.2, p. 40
- Graduate Seminar; see Section 2.3, p. 18
- Advanced Seminar (e.g., group meeting); see Section 2.3.1, p. 19
- Annual Milestone Meetings; see Section 2.3.2, p. 19
- Completion of research
- M.S. Final Oral Examination or Capstone Experience; see Section 3.2, p. 40

##### 3.1.2 *Repeating Courses*

The rules are the same as for Ph.D. students (see Section 2.3.4, p. 20).

##### 3.1.3 *Time Limit (Graduate School Requirement)*

A candidate for a Master's degree must complete all requirements for the degree *within five years* from the date of his/her enrollment as a graduate student at UWM (see Section 2.3.5). Note carefully that the Department expects you to complete the M.S. requirements in a much shorter period of time, namely three years. In special circumstances, the Graduate School may approve a petition for a longer time, if supported by your Thesis Advisor.

##### 3.1.4 *Entering the Ph.D. Program after Completing an M.S.*

A student who has received an M.S. degree in Chemistry from UWM may be admitted to the Ph.D. program providing the Entrance Examination requirement has been completed (see

Section 1.1, p. 8). If you were originally admitted to the M.S. program, you must formally go through the procedure of re-applying to the Ph.D. program and seek permission for admission from the Admissions Subcommittee, even though you remain at UWM the entire time (whether you are awarded the M.S. degree or not — this is a Graduate School regulation). It is not necessary to pay a second application fee

### 3.2 **Recommended Course of Study**

M.S. students have the same course requirements as Ph.D. students (see Section 2.4, p. 22), with the exception that only two (instead of three) courses in the minor area have to be chosen; research credits should be substituted for the third course. M.S. students must obtain at least 30 graduate credits before becoming eligible for graduation.

#### 3.2.1 ***First Year***

First Semester: Same as Ph.D. program of study (see Section 2.12.1).

Second Semester: Same as Ph.D. program of study (see Section 2.12.1).

#### 3.2.2 ***Second Year***

First Semester: You should complete your coursework in this semester. This will ordinarily be (at least) one course. You must have a minimum GPA of 3.0 at the end of this semester to maintain “good academic standing”.

Second Semester and beyond: This semester and the remainder of your time in the program will be spent doing original research and writing your M.S. Thesis.

### 3.3 **Steps for Completion of the M.S. Degree**

You are advised to consult the [Graduate School website](#) as specific procedures may change.

**Thesis Option**: Under this option, a written thesis is required of the M.S. degree candidate. The thesis is essentially a formal report of the research performed. The format of your dissertation must comply with Graduate School guidelines, which are published on the [Graduate School web site](#). Every spring and fall semester, the Graduate School holds a workshop to help acquaint graduates-to-be navigate the rules for formatting and submitting theses and dissertations as well as the requirements for graduation. For more information on these workshops, check the

Graduate School website.

The candidate must defend their thesis in a final **MS Final Oral Examination** administered by their Thesis Committee. At the direction of this Committee, the **MS Final Oral Examination** may include topics in addition to the thesis. The process for completing the M.S. degree in Chemistry involves the following steps:

- i. Early in the semester during which you expect to finish, complete the form entitled [Master's Graduation Application](#) and submit it electronically. Submission of this application initiates a review of your files by the Graduate School. If this review indicates the degree requirements are met (or will be met) during the semester in progress, the form will then be forwarded to the Department. You will be notified of any "incomplete" requirements that must be removed, or any other irregularities. If you do not finish during the term you had planned, it will be necessary to fill out this application again.
- ii. You must also pay a non-refundable \$40 graduation processing fee, which will be billed by the Bursar's office during the semester. This need only be paid once; In the event that you do not graduate during the intended semester, the fee will *not* be assessed a second time.
- iii. After consultation with your Thesis Advisor, ask at least two other Faculty members to serve on your Thesis Committee.
- iv. For the M.S. Thesis defense, obtain a form entitled **MS Final Oral Examination** from the Graduate Coordinator. This will be signed by the members of your Committee after the examination (if successful) and should then be taken to the Chairperson of the Graduate Subcommittee.
- v. When you have the dissertation assembled in rough draft, you are strongly encouraged to take a copy to the Graduate School for approval of the format. This is done by emailing the file to [gs-doctoralservices@uwm.edu](mailto:gs-doctoralservices@uwm.edu). This must be done before the formatting deadline. For example, the formatting deadline for graduation after the Fall 2020 term is November 20, 2020. These and other important Graduate School deadlines can be found at <https://uwm.edu/graduateschool/graduation-dates-deadlines/>. If you wait until your final draft to have the formatting checked, you may find that you need to make significant revisions!
- vi. The **MS Final Oral Examination** may not be undertaken *until all other requirements have been satisfied*. The warrant required for the final examination is sent to the Department by the Graduate School in response to a form returned by the Department, listing the

Committee's members.

- vii. **At least two weeks** before your examination, you must present a complete copy of the thesis to your Thesis Advisor for approval. At this time your Thesis Advisor should confirm that it meets the requirements of the Graduate School. Each member of your Committee should have a copy of thesis **at least one week** before the examination. In general, you should have a minimum of four copies of the thesis at the time of the exam: one for yourself and one for each of the Committee members.
- viii. After the examination, you should make all corrections recommended by the Committee. A signed copy, printed on quality bond paper, will be sent to the Graduate School. The Graduate School will, in turn, deposit it in the Golda Meir Library at UWM. An unbound copy is sent to the Department, and an additional copy will be hardbound for your Thesis Advisor. You may wish to have additional copies bound for yourself at the same time.
- ix. The completed thesis (signed by your advisor on the *Official Title Page*, on the *Abstract*, and on the *Vita Sheet*) must be submitted to the Graduate School by the posted [submission deadline](#). Theses received later than this will be accepted for graduation at the end of the *subsequent* semester and will require a new application for graduation.
- x. At the time you submit your thesis electronically to the Graduate School through the [ProQuest ETD Administrator](#), you will also submit the [Thesis & Dissertation Approval and Publishing Options Form](#) (with original signatures from both you *and* your Thesis Advisor).

After you have successfully completed your Final Defense and before leaving the Department, obtain a graduate student "Clearance" form (see Appendix C) from the Graduate Coordinator to indicate that you have cleared your laboratory, given the requisite number of copies of your thesis to the Department, returned your keys, and left a forwarding address. Failure to accomplish these actions will result in a "hold" on graduation and a "hold" on records for transcript purposes.

**Non-Thesis Option.** Also known as the "Capstone" or "Coursework M.S.". The requirements under this option are identical to those of the Thesis Option with the single exception that the thesis requirement is replaced by a more general "Capstone Experience". Each student will be required to have a faculty member as their Advisor. The division with which the Advisor is affiliated (*e.g.* Analytical, Biochemistry, Chemical Education, Inorganic, Organic or Physical) will establish "capstone experiences" required for graduation from that division. Within that division, the student, in conjunction with the advisor, will select an appropriate capstone experience on a case-by-case basis.

Some examples of capstone experiences are:

- Write and defend a thesis under the supervision of a committee of three faculty, one being the Advisor
- If the student has at least three years of prior industrial or government laboratory experience, they can write two survey papers on aspects of their professional experience. These papers will be reviewed and approved by a committee of three Faculty members, including the Advisor
- An in-depth review of some aspect of the Chemical Education literature with approval of a committee of three Faculty members, including the thesis advisor

## 4 APPENDICES

### 4.1 Appendix A: Chemistry and Biochemistry Graduate Student Milestones Checklist

Student Name: \_\_\_\_\_

Semester and year of entry: \_\_\_\_\_

The Department of Chemistry and Biochemistry strives to graduate Ph.D. students within 5 years. In order to help students advance in the program, and to identify students having trouble early enough to correct any deficiencies, the Department has instituted the system of Graduate Program Milestones described here. Students are required to convene a meeting of their Thesis Committee ***each year prior to the anniversary of their entrance into the program.*** Thus, students beginning in the fall semester (September) should schedule their committee meetings during July or August. Students should attempt to keep this date, to the extent possible, throughout their entire graduate career.

The Thesis Committee will review the student's progress toward the degree Milestones and will submit a copy of the degree checklist (see following pages), including an assessment score, to the Graduate Subcommittee each year following the annual Thesis Committee (aka "Milestones") meeting. ***This checklist is a formal document carrying the signatures of each member of the thesis committee.***

Prior to the committee meeting, the checklist will be updated with the student's current course grades, as well as the Teaching Score(s) from their TA supervisor(s) where applicable. The teaching score should be informed by direct observation of the TA at least once during the semester.

The Thesis Committee will evaluate all aspects of the student's progress, including research, and provide an assessment score to Graduate Subcommittee that serves the dual purpose of giving the student useful feedback about areas where they should improve their performance and providing the program assessment data required by the University. The Research Score from the committee will assess the student's research performance in two areas. First, the student's level of interest/engagement in their research project as manifested, for example, by their level of background knowledge and/or familiarity with the literature in their field. Second, the committee will consider the student's research progress (*e.g.* ability to generate and analyze data) and critical thinking ability. For both areas, the committee will score the student on a scale from 0 (deficient) to 3 (exemplary). The highest scores should be reserved for truly high-performing students in order to avoid skewing the assessment data. The program standing, teaching, and research scores will be summed and divided by the number of possible points in order to account for semesters where the student did not teach undergraduates. A score of **60%** will be considered passing. A failing score will place the student on probation, which means that the Thesis Committee must reconvene after the following semester to determine whether the student has regained their Good Standing. ***Two consecutive failing scores will be considered grounds for removal from the Graduate Program in Chemistry.*** This decision will be made jointly by the Graduate Subcommittee and the student's Thesis Adviser. ***There will be no appeal of the decision to remove a student from the graduate program.***



## Year 1

### 1<sup>st</sup> Semester

- Course 1: (Grade \_\_)
- Course 2: (Grade \_\_)
- 912 Seminar (Audit S/U)

### 2<sup>nd</sup> Semester

- Course 3: (Grade \_\_)
- Course 4: (Grade \_\_)
- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Retake Entrance Exams
- Select and Meet with Thesis Committee
- Choose Graduate Seminar Topic

Credits: \_\_\_\_\_

Date of Committee Meeting: \_\_\_\_\_

### Committee Assessment

Program standing:        0 (1 or more deficiencies)        1 (All milestones completed)

### Teaching:

1<sup>st</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

2<sup>nd</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Average Teaching Score: \_\_\_\_\_

### Research:

Interest & effort (background/lit. knowledge)

- 0 (Deficient; *e.g.* lack of effort)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Progress & critical thinking

- 0 (Deficient; *e.g.* little/no data generated)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Total assessment score: \_\_\_\_\_ Normalized to # of possible points: \_\_\_\_\_

Supervisor \_\_\_\_\_ Member 2 \_\_\_\_\_ Member 3 \_\_\_\_\_

Member 4 \_\_\_\_\_ Member 5 \_\_\_\_\_ Member 6 \_\_\_\_\_

## Year 2

### 3<sup>rd</sup> Semester

- Course 5: (Grade \_\_)
- Course 6: (Grade \_\_)
- 912 Seminar for credit (Grade \_\_)
- Group Meeting [931-935] (Grade S/U)
- Entrance Exams Complete

### 4<sup>th</sup> Semester

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Advanced Qualifying Exam (P/F)
- Meet with Thesis Committee

Credits: \_\_\_\_\_

Date of Committee Meeting: \_\_\_\_\_

### Committee Assessment

Program standing:  0 (1 or more deficiencies)  1 (All milestones completed)

### Teaching:

3<sup>rd</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

4<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Average Teaching Score: \_\_\_\_\_

### Research:

Interest &amp; effort (background/lit. knowledge)

- 0 (Deficient; *e.g.* lack of effort)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Progress &amp; critical thinking

- 0 (Deficient; *e.g.* little/no data generated)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Total assessment score: \_\_\_\_\_

Normalized to # of possible points: \_\_\_\_\_

Supervisor \_\_\_\_\_ Member 2 \_\_\_\_\_ Member 3 \_\_\_\_\_

Member 4 \_\_\_\_\_ Member 5 \_\_\_\_\_ Member 6 \_\_\_\_\_

**Year 3**

**5<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)

**6<sup>th</sup> Semester (MS final semester)**

- 912 —Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Preliminary Comprehensive Exam (Orals) (P/F)
- MS Final Oral Examination (MS only) (P/F)

Credits: \_\_\_\_\_

Date of Committee Meeting: \_\_\_\_\_

**Committee Assessment**

Program standing:          0 (1 or more deficiencies)          1 (All milestones completed)

**Teaching:**

5<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

6<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Average Teaching Score: \_\_\_\_\_

**Research:**

Interest & effort (background/lit. knowledge)

- 0 (Deficient; *e.g.* lack of effort)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Progress & critical thinking

- 0 (Deficient; *e.g.* little/no data generated)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

**Total assessment score:** \_\_\_\_\_

**Normalized to # of possible points:** \_\_\_\_\_

Supervisor \_\_\_\_\_ Member 2 \_\_\_\_\_ Member 3 \_\_\_\_\_

Member 4 \_\_\_\_\_ Member 5 \_\_\_\_\_ Member 6 \_\_\_\_\_

**Year 4****7<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)  
 Group Meeting [931-935] (Grade S/U)  
 Thesis Pre-Defense (if final year)

**8<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)  
 Group Meeting [931-935] (Grade S/U)  
 Meet with Thesis Committee **OR**  
 Thesis Defense

Credits: \_\_\_\_\_

Date of Committee Meeting: \_\_\_\_\_

**Committee Assessment**Program standing:  0 (1 or more deficiencies)  1 (All milestones completed)**Teaching:**7<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)  
 0 (Deficient)  
 1 (Does not meet expectations)  
 2 (Meets expectations)  
 3 (Exceeds expectations)

8<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)  
 0 (Deficient)  
 1 (Does not meet expectations)  
 2 (Meets expectations)  
 3 (Exceeds expectations)

Average Teaching Score: \_\_\_\_\_

**Research:**

Interest &amp; effort (background/lit. knowledge)

- 0 (Deficient; *e.g.* lack of effort)  
 1 (Does not meet expectations)  
 2 (Meets expectations)  
 3 (Exceeds expectations)

Progress &amp; critical thinking

- 0 (Deficient; *e.g.* little/no data generated)  
 1 (Does not meet expectations)  
 2 (Meets expectations)  
 3 (Exceeds expectations)

Total assessment score: \_\_\_\_\_

Normalized to # of possible points: \_\_\_\_\_

Supervisor \_\_\_\_\_ Member 2 \_\_\_\_\_ Member 3 \_\_\_\_\_

Member 4 \_\_\_\_\_ Member 5 \_\_\_\_\_ Member 6 \_\_\_\_\_

**Year 5**

**9<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Thesis Pre-Defense (if final year)

**10<sup>th</sup> Semester (Ph.D. final semester)**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Meet with Thesis Committee **OR**
- Thesis Defense

Credits: \_\_\_\_\_

Date of Committee Meeting: \_\_\_\_\_

**Committee Assessment**

Program standing:          0 (1 or more deficiencies)          1 (All milestones completed)

**Teaching:**

9<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

10<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Average Teaching Score: \_\_\_\_\_

**Research:**

Interest & effort (background/lit. knowledge)

- 0 (Deficient; *e.g.* lack of effort)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Progress & critical thinking

- 0 (Deficient; *e.g.* little/no data generated)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

**Total assessment score:** \_\_\_\_\_

**Normalized to # of possible points:** \_\_\_\_\_

Supervisor \_\_\_\_\_ Member 1 \_\_\_\_\_ Member 2 \_\_\_\_\_

Member 3 \_\_\_\_\_ Member 4 \_\_\_\_\_ Member 5 \_\_\_\_\_

## Year 6

### 11<sup>th</sup> Semester

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Thesis Pre-Defense (if final year)

### 12<sup>th</sup> Semester

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Meet with Thesis Committee **OR**
- Thesis Defense

Credits: \_\_\_\_\_

Date of Committee Meeting: \_\_\_\_\_

### Committee Assessment

Program standing:          0 (1 or more deficiencies)          1 (All milestones completed)

### Teaching:

11<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

12<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Average Teaching Score: \_\_\_\_\_

### Research:

Interest & effort (background/lit. knowledge)

- 0 (Deficient; *e.g.* lack of effort)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Progress & critical thinking

- 0 (Deficient; *e.g.* little/no data generated)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Total assessment score: \_\_\_\_\_

Normalized to # of possible points: \_\_\_\_\_

Supervisor \_\_\_\_\_ Member 1 \_\_\_\_\_ Member 2 \_\_\_\_\_

Member 3 \_\_\_\_\_ Member 4 \_\_\_\_\_ Member 5 \_\_\_\_\_

**Year 7\***

**13<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Thesis Pre-Defense (if final year)

**14<sup>th</sup> Semester and higher**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Meet with Thesis Committee **OR**
- Thesis Defense

Credits: \_\_\_\_\_

Date of Committee Meeting: \_\_\_\_\_

**Committee Assessment**

Program standing:          0 (1 or more deficiencies)          1 (All milestones completed)

**Teaching:**

13<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

14<sup>th</sup> Semester:

- NA (Student did not teach undergraduates)
- 0 (Deficient)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Average Teaching Score: \_\_\_\_\_

**Research:**

Interest & effort (background/lit. knowledge)

- 0 (Deficient; *e.g.* lack of effort)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Progress & critical thinking

- 0 (Deficient; *e.g.* little/no data generated)
- 1 (Does not meet expectations)
- 2 (Meets expectations)
- 3 (Exceeds expectations)

Total assessment score: \_\_\_\_\_

Normalized to # of possible points: \_\_\_\_\_

Supervisor \_\_\_\_\_ Member 1 \_\_\_\_\_ Member 2 \_\_\_\_\_

Member 3 \_\_\_\_\_ Member 4 \_\_\_\_\_ Member 5 \_\_\_\_\_

*\* This page should be duplicated to record years 8-10, beyond which the Graduate School time limit requires the student to either graduate or be removed from the program.*



## 4.2 Appendix B: Graduate Student Milestones Tracker

This worksheet is intended only as a quick reference to help students keep track of which milestones are due in which semesters. This is exclusively for the personal use of individual graduate students and is not a substitute for the official Milestones Checklist carrying the signatures of the Thesis Committee members. Note that Research (990-996) is required from the 2<sup>nd</sup> semester onward.

### Year 1

#### 1<sup>st</sup> Semester

- Course 1: (Grade \_\_)
- Course 2: (Grade \_\_)
- 912 Seminar (Audit S/U)

#### 2<sup>nd</sup> Semester

- Course 3: (Grade \_\_)
- Course 4: (Grade \_\_)
- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Retake Entrance Exams
- Select and Meet with Thesis Committee
- Choose Graduate Seminar Topic

### Year 2

#### 3<sup>rd</sup> Semester

- Course 5: (Grade \_\_)
- Course 6: (Grade \_\_)
- 912 Seminar for credit (Grade \_\_)
- Group Meeting [931-935] (Grade S/U)
- Entrance Exams Complete

#### 4<sup>th</sup> Semester

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Advanced Qualifying Exam (P/F)
- Meet with Thesis Committee

### Year 3

#### 5<sup>th</sup> Semester

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)

#### 6<sup>th</sup> Semester

- 912 —Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Preliminary Comprehensive Exam (Orals) (P/F)

### Year 4

#### 7<sup>th</sup> Semester

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Thesis Pre-Defense (if final year)

#### 8<sup>th</sup> Semester

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Meet with Thesis Committee **OR**
- Thesis Defense

### Year 5

**9<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Thesis Pre-Defense (if final year)

**Final Semester**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Meet with Thesis Committee **OR**
- Thesis Defense

**Year 6****11<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Thesis Pre-Defense (if final year)
- Thesis Defense

**12<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Meet with Thesis Committee **OR**

**Year 7\*****13<sup>th</sup> Semester**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Thesis Pre-Defense (if final year)

**14<sup>th</sup> Semester and higher**

- 912 Seminar (Audit S/U)
- Group Meeting [931-935] (Grade S/U)
- Meet with Thesis Committee **OR**
- Thesis Defense

\* The milestones remain the same for years 8-10, beyond which the Graduate School time limit requires the student to either graduate or be removed from the program.

4.3 **Appendix C: Chemistry Graduate Student Clearance Form**

DATE: \_\_\_\_\_

FROM: \_\_\_\_\_

Prior to graduation each graduate student must clear several areas in the Chemistry and Biochemistry to insure that important administrative functions are accomplished before the student departs. These areas are: (1) thesis copy for the department; (2) lab checkout by the Thesis Advisor; (3) key return to the department; and (4) forwarding address to the department. When each function has been accomplished, the responsible person will sign and date this form to verify that it has been done. The completed form will be given to the Department Graduate Coordinator for placement in the student's file.

**FAILURE TO ACCOMPLISH THESE ACTIONS WILL RESULT IN A HOLD ON THE GRADUATION AND A HOLD ON THE RECORDS FOR TRANSCRIPT PURPOSES!**

1. Lab Clearance: \_\_\_\_\_  
(Thesis Advisor Signature) (Date)

2. Thesis Copy: \_\_\_\_\_  
(Department Administrator Signature) (Date)

3. Key Return: \_\_\_\_\_  
(Dept Admin. Or Purchasing Coordinator) (Date)

4. Forwarding \_\_\_\_\_  
Graduate Coordinator) (Date)

Forwarding Address: \_\_\_\_\_ Company Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tel: \_\_\_\_\_ Tel: \_\_\_\_\_

LinkedIn Profile: \_\_\_\_\_