

Graduate Student Handbook

2024-2025

Department of Chemistry and Biochemistry

Department Chair – John Wood

Graduate Program Directors:

Michael A. Trakselis – Director of Graduate Affairs

Darrin J. Bellert – Director of Graduate Recruiting

Graduate Affairs Committee:

Director of Graduate Affairs

Director of Graduate Recruiting

Kevin L. Shuford

Caleb D. Martin

Bryan F. Shaw

Touradj Solouki

Daniel Romo

Graduate Program Coordinator (GPC) – Emily Jessup

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REQUIREMENTS FOR THE DEGREES OF MASTER OF SCIENCE AND DOCTOR OF PHILOSOPHY IN CHEMISTRY AND BIOCHEMISTRY

This document lists supplemental departmental regulations for the M.S. and Ph.D. Degrees in Chemistry and Biochemistry. Most details on the Graduate School regulations may be found in the Bulletin of the Graduate School.

I. Objectives of the Program

The Ph.D. is the highest degree in the fields of chemistry and biochemistry. The decision to pursue this degree should be based on a high aptitude for the subject and a determination to function as a professional in the field. The preparation for this degree involves significant coursework and research designed to provide both an in-depth understanding of one area of chemistry (e.g., analytical, biochemistry, inorganic, organic, materials or physical) as well as exposure at an advanced level to types of chemistry outside the area of specialization. Students seeking the Ph.D. are expected to develop research skills, the ability to effectively present the results of their research, and have a demonstrated familiarity with the scientific literature in their area of specialization. The underlying goal of the program is to develop students into independent thinkers, efficient problem solvers, and outstanding scientists who will matriculate to productive careers in the chemical and biological sciences where they will contribute as responsible and informed members of society.

The Ph.D. degree is essentially a license to practice independent research and/or to teach at the university level. Once a student has completed their graduate degree(s), they should possess an academic background adequate to enable the graduate to conduct research and teach courses in chemistry and/or biochemistry.

II. Entrance Requirements

- A. All students entering for M.S. or Ph.D. degrees should have a bachelor's degree equivalent to a B.S. degree in chemistry or biochemistry. Admission of students holding related science degrees will be considered on a case-by-case basis.
- B. Potential Students are evaluated using a wholistic committee review process assessing performance in past courses, relevant research experiences, a personal statement, and letters of reference.

III. Programs of Study

A. MASTER OF SCIENCE (NON-THESIS)

The minimum semester-hour requirement for the M.S. non-thesis degree is thirty semester hours.

	<u>30 sem. hrs.</u>
Lecture course work in the major area of specialization	9
Additional lecture course work outside the major area of specialization	6
CHE 5260: Scientific Communication	2
CHE 5101: Responsible Conduct of Research	1
Additional lecture and/or research course work (<i>i.e.</i> 5V98)	11
Colloquium (CHE 5050) – Registered every Fall/Spr semester	0
Pre-candidacy Seminar (CHE 5150)	1

Note: Students are not directly admitted into the Non-Thesis MS program. The maximum time limit for completion of the MS degree is five years. A typical time frame required for completion of M.S. is 2-3 years.

B. MASTER OF SCIENCE (ON-THE-WAY) (MOTW)

Once you pass your Pre-candidacy exam, you may apply for the Master-on-the-way degree. This degree is not required for continuation in the PhD program, however, some students (especially foreign nationals) may find it useful for various National Interest Waiver (NIW) Visa applications.

To apply:

- 1) Indicate your intent to apply for MOTW with the Departmental GPD and GPC.
- 2) Register with the Graduate School at <https://grad.baylor.edu/register/motw>
- 3) Complete Lab Clearance form with EH&S indicating "Student is continuing on in the program (Masters continuing to Doctorate or Doctorate continuing to Post-Doc)." <https://ehs.web.baylor.edu/lab-safety/forms>
- 4) File for graduation as a MS degree through Bearweb.

Note: Students will then continue in the PhD program as normal.

C. MASTER OF SCIENCE (THESIS)

The minimum semester-hour requirement for the M.S. degree is thirty-six semester hours that include six semester hours of CHE 5V99.

	<u>36 sem. hrs.</u>
Lecture course work in the major area of specialization	9
Additional lecture course work outside the major area of specialization	6
CHE 5260: Scientific Communication	2
CHE 5101: Responsible Conduct of Research	1
Additional lecture and/or research course work as determined by the thesis committee (<i>i.e.</i> 5V98)	10
Colloquium (CHE 5050) – Registered every Fall/Spr semester	0
Pre-candidacy Seminar (CHE 5150)	1
Defense Seminar (CHE 5150)	1
Thesis (CHE 5V99)	6

Note: Students are not directly admitted into the Non-Thesis MS program. The maximum time limit for completion of the MS degree is five years. A typical time frame required for completion of M.S. is 2-3 years.

D. DOCTOR OF PHILOSOPHY

The minimum semester-hour requirement for the Ph. D. degree is seventy-eight semester hours. Note: It is not necessary that students with the B.A. or B.S. degree obtain an M.S. degree in chemistry before pursuing a doctorate degree.

	<u>78 sem. hrs.</u>
Lecture course work in the major area of specialization	9
Additional lecture course work outside the major area of specialization	6
CHE 5260: Scientific Communication	2
CHE 5101: Responsible Conduct of Research	1
Additional lecture and/or research course work as determined by the dissertation committee (<i>i.e.</i> 5V98)	45
Colloquium (CHE 5050) – Registered every Fall/Spr semester	0
Pre-candidacy Seminar (CHE 5150)	1
Candidacy Seminar (CHE 5150)	1
Defense seminar (CHE 5150)	1
Dissertation (CHE 6V99)	12

The maximum time limit for completion of the Ph.D. degree is eight years from the time the student first matriculates into the doctoral program. A typical time frame required for completion of Ph.D. degrees is 4-6 years.

IV. Course Requirements

Students will be required to complete 18 credit hours of coursework, including a minimum of 9 credit hours in the chosen area of specialization, a one-hour “Research Ethics” course (CHE 5101) and a two-hour “Scientific Communication” course (CHE 5260). CHEM 5101 and 5260 should be completed during their first year of graduate study and are required for all graduate students. The remaining 6 hours of coursework may be taken in any area, and students will have the option of completing one course in another department (with Director of Graduate Affairs approval). [Note: The requirement for a minor field of study stated in the Bulletin of the Graduate School does not apply to the graduate degrees in chemistry and biochemistry.]

Each student is expected to register for CHE 5050 every Fall and Spring semester and attend the associated Departmental Colloquia. Attending at least 75% of the departmental colloquia is required to receive a passing grade in CHE 5050. Absences beyond 25% must be accompanied with a valid excuse (*e.g.*, illness, personal or family crisis, conflicting professional meeting, etc.) presented to the seminar coordinators (*i.e.*, CHE-5050 Teachers of Record and Graduate Program Coordinator) within one week of the seminar. Only those students receiving Credit for CHE 5050 will be eligible for graduate student TA or research awards in that year.

A. Courses

(Note: course offerings are subject to change, and any courses in the appropriate Divisions can be used to meet the general coursework requirements.)

	Analytical	Biochemistry	Inorganic	Organic	Physical
CHE	5310	5341	5301	4334	5320
CHE	5312	5345*	5302	5331	5322
CHE	5314	5346	5304	5335	5323*
CHE	5315	5347*	5305	5336	5325
CHE	5316	5348	5306*		5326
CHE	5345*	5306*	5323*		5347*

Analytical

CHE 5310 (Advanced Chemical Instrumentation)
CHE 5312 (Advanced X-omics Mass Spectrometry)
CHE 5314 (Separation Science)
CHE 5315 (Electroanalytical Chemistry)
CHE 5316 (Analytical Spectroscopy)
CHE 531X (where X is any number)
CHE 5345* (Selected Topics in Bioanalytical Chemistry)

Biochemistry

CHE 5341 (Biopolymers)
CHE 5345* (Selected Topics in Bioanalytical Chemistry)
CHE 5346 (Chemical Biology)
CHE 5347* (Physical Biochemistry)
CHE 5348 (Enzymology)
CHE 534X (where X is any number)
CHE 5306* (Bioinorganic Chemistry)

Inorganic

CHE 5301 (Chemistry of the Elements)
CHE 5302 (Symmetry and Group Theory in Chemistry)
CHE 5304 (Special Topics in Inorganic Chemistry)
CHE 5305 (Organometallic Chemistry and Homogenous Catalysis)
CHE 5306* (Bioinorganic Chemistry)
CHE 530X (where X is any number)
CHE 5323* (Structural Studies by X-ray Crystallography)

Organic

CHE 4334 (Organic Spectroscopy)
CHE 5331 (Stereochemistry)
CHE 5335 (Physical Organic Chemistry)
CHE 5336 (Advanced Synthesis and Natural Products)
CHE 533X (where X is any number)

Physical

CHE 5320 (Thermodynamics and Statistical Thermodynamics)
CHE 5322 (Chemical Kinetics and Mechanisms)
CHE 5323* (Structural Studies by X-ray Crystallography)
CHE 5325 (Quantum Chemistry)
CHE 5326 (Lasers and Molecular Spectroscopy)
CHE 532X (where X is any number)
CHE 5347* (Physical Biochemistry)

**approved two-area courses*

Departmental CHE5V60 Courses

Occasionally, the Department will offer Advanced Special Topics in Chemistry courses under the CHE5V60 course number. These courses are specialized in a particular discipline/area of Chemistry and can count to qualify in an area of Chemistry. The GPDs and the course instructors will determine and communicate which areas of Chemistry are covered. CHE5V60 may be repeated for credit if a different topic is covered. CHE5V60 courses taught more than two times will be converted by the faculty member to permanent course numbers through application to the Graduate STEM curriculum committee.

Courses outside the Major Field

Appropriate courses from other Departments may be taken upon approval of the Director of Graduate Affairs and the student's research advisor. Relevant graduate courses in the departments of Anthropology, Psychology and Neuroscience, Computer Science, Geology, Statistics, Biology, Environmental Science (ENV), Human Health, Performance, and Recreation (HHPR), Physics, Departments within the School of Engineering, or other departments may be highly relevant to individual student's program of study. A student should get prior approval from their PI and the GPD before registering for a course outside of the Chemistry and Biochemistry Department. Only one outside course (3 cr) may count towards a student's 18 credit course requirement.

B. Performance standard

A minimum grade of "B-" is required to satisfy any graduate course requirement. Students must also maintain a minimum overall graduate lecture course only GPA of 3.0.

IMPORTANT: Graduate school policy states that failure to maintain a minimum overall GPA of 3.0 results in immediate probationary status. Students on probation are ineligible for stipend support and tuition waivers.

Students must attain the minimum overall course GPA of 3.0 by the end of their subsequent semester to be removed from probationary status. Failure to maintain the minimum GPA for two consecutive semesters will result in expulsion from the graduate program.

C. Transfer of credit for courses taken at other institutions

Consult the Bulletin of the Graduate School for regulations concerning transfer of graduate course work from another institution. If a student has shown proficiency (a minimum grade of "B") in the subject matter of core courses taken at another accredited institution and the course content is essentially the same, a petition may be made to the Director of Graduate Affairs in consultation with the appropriate Divisions (*i.e.*, analytical, biochemistry, inorganic, materials, organic, or physical) to receive credit and/or waive the corresponding requirements. The petition, along with any necessary documentation (transcript, catalog description, course syllabus), will be referred to the faculty in the respective Division(s) for consideration of course transfer. The decision of the Division(s) will then be communicated to the student in writing by the GPDs (Graduate Program Directors) in Chemistry and Biochemistry. Generally, courses used for the completion of a degree (BA, BS, MS, etc.) are not transferable to satisfy requirements for the PhD, especially if they are completed at non-R1 Institutes or those outside of the United States.

Important Note: courses from other institutions that are graded on a pass/fail basis are not transferable to Baylor University in accordance with the Graduate School policy.

V. Selection and Status in a Research Group

A. Research Group Rotations and Matching

To help students develop or define their interest in a particular area of specialization, during their first semester in residence they will engage in brief (~ 3-4 week) rotations in at least three research groups. The rotations and timing must be mutually agreed upon by the student and respective research professors. Typically, these rotations will coincide with the months of Sept, Oct, and Nov. Students are expected to spend at least 10 hours per week with each lab. By the last day of regular classes in the Fall semester, each student will submit a ranked list of their top three group choices to the Director of Graduate Recruiting. The GPDs in consultation with the graduate faculty will match students to a group based on student preferences, professor approval, and funding considerations. Should an effective match not be made by the end of the first semester, a fourth (or fifth) rotation in the succeeding month(s) is possible with approval from the GPDs. Students and Faculty advisors are expected to read, discuss, and acknowledge the **Graduate Advisor/Advisee Agreement** upon joining a laboratory as directed by the Graduate School. <https://grad.baylor.edu/register/?id=dd1f4387-d9a1-42ca-9e14-35bd0666bd8e>

B. Maintaining Status in a Research Group

Research grades for CHE5V98 will be assigned by the Director of Graduate Recruiting for the first semester. Beginning with the second semester in residence, a student must consistently receive passing grades in CHE5V98 from their research advisor to remain in the graduate program. Failure to make significant PhD thesis research progress, severe personal conflicts, or unprofessional conduct may result in the advisor removing that student from their group and/or assigning a failing grade in CHE5V98. Students must be an active member of a research group to remain in the Graduate Program.

C. Appropriate Student Conduct

Students must be professional and effective researchers, work within a laboratory environment according to the rules and regulations of the Department, Baylor, and EH&S. Individual groups may also provide additional guidelines for research. Inappropriate behavior may include fraternizing with undergraduate students, failure to follow directions specified by Laboratory Coordinators, Instructors, or your Research Advisor. Tardiness, violating laboratory safety regulations, violations of the Honor Code, and disrespectful behavior to students, staff, or faculty, will be treated very seriously by the Advisor, GPDs, and Department Chair. Depending upon the severity of the offense, the student may be issued a formal reprimand and/or be removed as a teaching or research assistant for one semester, including loss of funding. Repeat offenses will result in dismissal from the graduate program. Formal appeals of GPD decisions, programmatic issues, disciplinary issues, or personal conflicts will be forwarded to and voted on by the Departmental Graduate Affairs Committee. In extreme situations, the Graduate School has a policy on **Student Professional Conduct** and guidelines for reporting such behavior <https://www.baylor.edu/graduate/index.php?id=969446>.

D. Procedure for Changing Research Groups

Students are expected to remain with the same mentor or co-mentors throughout their degree program, but change is possible. Circumstances can arise that cause either the student or faculty member or both to realize that continuing to work together is not in their best interest. Ideally in these situations, the student and faculty member will work together in finding an alternative research group. However, ultimately it is the student's responsibility to identify and gain acceptance into another group through discussions or additional research rotations. Students will be given one semester to either gain membership in a new research group or leave the Graduate Program.

E. Guidelines of Graduate Student Vacation and Leave

Graduate study is a full-time commitment. However, being able to take time off is important for student wellbeing and success. The Department is committed to providing students with the opportunity to take reasonable time off to recharge. These guidelines aim to establish clear and consistent expectations for all PhD students within the Department of Chemistry and Biochemistry.

Vacation and Holidays. In addition to regular University Holidays, graduate students may take up to 10 additional working days of vacation during a single calendar year. Currently, there are 12 University Holidays: New Year's Day, Martin Luther King Jr. Day, Good Friday, Easter Monday, Memorial Day, Juneteenth, Independence Day, Labor Day, Thurs-Fri of Thanksgiving, Christmas Eve, and Christmas Day. Time-off for other religious holidays (not listed here) may be substituted for one of the University Holidays and must be communicated to the Advisor. Fall break, Christmas (winter) break, Spring break, Diadeloso are *not* University holidays. They reflect time off from classes, but not from teaching and research assistantships. Although there is a University holiday during the week of Christmas/New Years, students may be expected to continue research during this time. Graduate students who wish to be away from their assistantship duties during those breaks should request it from the allotted vacation days. Students taking courses or acting as a TA are expected to attend all classes, labs, and take all exams as scheduled and not take vacation during that time.

Generally, there is no year-to-year accrual of vacation days, however, students may be allowed to bank 5 days of vacation to apply to a subsequent year with their Advisor's approval. All students need to be aware of any and all visa implications for traveling internationally and must communicate with Baylor's Center for Global Engagement who can assist the student in obtaining the necessary clearance and documentation required for re-entry into the United States. In all cases, vacation time should be prearranged with the student's Advisor.

Students wishing to take more time off than what is outlined here must get prior approval from their Adviser. Additional time off in excess of the yearly allotment may result in the stoppage of stipend payments. Approval for additional periods of time away with stipend support may also be subject to funding-agency restrictions.

Sick Leave and Other Leave. Graduate students are also eligible for up to 5 days of sick leave per annum, with no year-to-year accrual. Under exceptional circumstances, additional sick days may be granted following a written request and approval by the student's Advisor. Upon graduation or termination, a graduate student forfeits all unused annual sick leave.

The Graduate School has policies on **Accommodations for Childbirth/Adoption**

<https://www.baylor.edu/graduate/index.php?id=959189> and **Short-Term Medical Leaves of Absence**

<https://www.baylor.edu/graduate/index.php?id=959190>. Should a student need one of these accommodations, the first step is to inform the Director of Graduate Affairs who will work with the Department and the Graduate School to facilitate this process including identifying substitutes for teaching or other Departmental duties, explaining graduate course implications, and liaising with the student's research mentor. Both policies have options for continued stipend support during these leaves.

VI. Examination Requirements

A. Placement and Qualification

All entering graduate students are required to take a qualifying exam in each of five areas (*i.e.*, analytical, biochemistry, inorganic, physical, and organic). Those students that have not taken an applicable undergraduate course in either inorganic chemistry or biochemistry may be exempt from taking that qualifying exam. Students must ultimately pass a qualifying exam OR complete a formal approved undergraduate (*i.e.*, 4000 level) or graduate course (*i.e.*, 5000 level) with a grade of “**B**” or better in each of three areas, including the chosen area of specialization. This requirement must be met by the end of the student’s second semester of residency in the program. Qualifying exams will typically be offered in August, January, and April. Students that fail to meet this requirement will be terminated from the graduate program, without a degree, at the end of their first year of study. Note: preapproved "two-area courses" (*e.g.*, Bioanalytical, Biophysical, Bioinorganic, etc.) are allowed to count toward either area as indicated in the Table (Section III.A) above but not both areas. Neither courses taken as an undergraduate nor transfer courses will count toward meeting the placement qualification requirements. Petitions to take courses outside of the Department must be made to the Director of Graduate Affairs (in consultation with the faculty advisor) prior to registering.

B. Faculty Committee Compositions

The specific members of the following committees are chosen by the student in close consultation with their advisor and must be members of the Baylor Graduate Faculty. The GPDs can nominate faculty members to be members of the Graduate Faculty by petition to the Dean of the Graduate School.

1. **Second-year Pre-Candidacy Exam Committee** shall consist of the student’s advisor and two other research faculty within the Department of Chemistry and Biochemistry. All members of the committee must be members of the Graduate Faculty at Baylor University.
2. **Third-year Candidacy Exam Committee** shall consist of the same three Graduate Faculty that attended the second-year exam, as well as a fourth “outside” Graduate Faculty committee member from another Department. The “outside” committee member is chosen by the student in consultation with her/his advisor. An outside graduate faculty member from another University or Institute may be included in addition to (but not in place of) other normal committee members.
3. **MS Dissertation Committee** shall consist of four Graduate Faculty members as defined in VI-B-2.
4. **PhD Dissertation Committee** shall consist of four Graduate Faculty members as defined in VI-B-2.

C. Student Seminars/Oral Exams

1. Second-year Pre-Candidacy Exam

All students, whether they begin residency in August or January, will be required to pass a pre-candidacy exam before the end of May in the student’s second year. The date and time of the exam is to be arranged by the student based on faculty and room availability. In preparation for this exam a student will register for 1 credit of CHE 5150 in the summer term, prepare an oral presentation describing ongoing and/or proposed research and, one week prior to the oral presentation, submit a written research proposal to their Pre-Candidacy Exam Committee (VI-B-1). The written proposal will typically be an extension of the research proposal prepared for CHE 5260 Scientific Communication and must follow either the current NIH R01 style or the NSF style, depending on the advisor’s preference. Students should closely follow all the current page limitations, fonts, margins and other specifics as defined by either funding agency. The NIH R01 preparation instructions are contained in Form SF424 (R&R) at <http://grants.nih.gov>. The NSF Grant Proposal guide can be found at <https://www.nsf.gov/publications>.

The oral part of the pre-candidacy exam will consist of an approximately 45-minute public presentation, followed by a closed-door oral exam, approximately two hours total duration by the Pre-Candidacy committee (VI-B-1). The content of this presentation should mimic the written proposal and include: (1) relevant literature that frames the background, novelty, and significance of the research project; (2) specific aims (goals or objectives) of the research project; (3) experimental results to date; and (4) plans for future work.

After the departmental presentation, students will field questions from the audience first and then from faculty during the closed-door session. Based on a simple majority, a Pass/Fail grade will be assigned by the student's committee. In the event of a tie, the student will pass. Students that do not pass this exam will be transitioned to a terminal, non-thesis M.S. track and should file for graduation in August of the same calendar year.

Those students that decide to change degree tracks to the non-thesis M.S. prior to the second-year exam are only required to complete a public departmental seminar on their independent research to fulfill the CHE 5150 requirement (1 credit). A Pass/Fail grade will be assigned by their faculty mentor.

2. **Third-year Candidacy Exam**

Students must pass a Candidacy Exam no later than the end of June in the student's third year of residency. The purpose of the Candidacy Exam is for students to demonstrate preparation and effectiveness in PhD level research. The student should be able to demonstrate expertise in her/his chosen field of study and have a clear idea of how her/his research project will be expanded to fill out a dissertation. In preparation for the Candidacy Exam, students should register for 1 credit of CHE 5150, define and schedule the exam with their Candidacy Exam Committee (VI-B-2), and prepare an oral presentation focusing on their research progress. Ideally, students will have authored and submitted or published a peer-reviewed manuscript describing their research. The realistic expectation is that at the time of the exam, a paper is published, in press, accepted, or submitted to be provided to the Third-year Candidacy Exam Committee. Students that have not yet published a peer-reviewed manuscript must provide committee members with a completed draft manuscript that specifically follows the format specified by the target journal at least one week prior to the examination.

This exam consists of an approximately 45-minute, "departmental" presentation, similar to the second-year exam, but with an emphasis on what has been accomplished since the second-year exam. The presentation should also outline the student's plans for completing the Ph.D. dissertation. The presentation will be followed by a closed-door oral exam, with a total duration of approximately two hours. A pass/fail decision will be rendered by the student's Candidacy Exam Committee (VI-B-2) and will be based on a simple majority opinion. In the event of a tie, the student will pass. Students that do not pass this exam by the end of their third year of residency in the program will be transitioned to a terminal M.S. degree track and should file for graduation in August of the same calendar year.

After successfully gaining Ph.D.-Candidacy and upon completing 45 hours of CHE 5V98, students may begin registering for CHE 6V99. Grades for 6V99 should be given by the advisor: 1) "CR" – Credit, indicates the student made satisfactory progress 2) "NC" – No Credit, indicates the student did not make satisfactory progress or 3) "I" Incomplete, student has not completed all assignments for the semester. "I" grades must be completed before certification to graduate.

3. **Combined Second/Third Year Candidacy Exam**

Students who feel their research progress has been exemplary in their first two years and in consultation with their research advisor may request that the pre-candidacy and candidacy exams be combined into a single exam taken in May at the end of the student's second year. The combined exam would include all elements of the separate exams in the 45-minute presentation, and the written research proposal should be of sufficient scope to justify a Ph.D. degree.

It is the responsibility of the student to obtain all department evaluation forms and signatures necessary for completion of the exams. These are to be turned into the GPC upon completion.

Graduate students are discouraged from providing any food or beverages for the defense and faculty are not permitted to request that students provide refreshments.

D. Annual Meetings with the Dissertation Committee

Once admitted to Ph.D. candidacy, the student's Ph.D. dissertation committee (VI-B-4) will continue to monitor progress toward the dissertation. To this end, at each 12-month interval after the candidacy exam, the student will provide the

committee with a one-two page summary of accomplishments, future goals, and timelines. Additionally, at any time, either the student or any committee member can request the scheduling of an in-person meeting.

VII. Statement on AI in Graduate Education and Research within the CBC Department

The faculty recognize the potential that generative AI (gAI) may have to significantly enhance graduate student education and research by providing new tools for data analysis, hypothesis generation, problem-solving, and aiding writing. However, it is critical to use this technology responsibly and ethically and to avoid any potential plagiarism issues. As a graduate student, you should be able to formulate your own innovative ideas and thoughts as applied to coursework, research projects, and dissertation. gAI can be helpful in summarizing literature and facilitating experimental design and analysis, however, it can also provide inaccurate data and biases. It is your responsibility to verify and evaluate any information obtained from gAI. It is not appropriate to use gAI to produce significant amounts of text for research publications or in your dissertation.

It is appropriate to use AI or gAI for:

1. Better understanding of the scientific literature and performing background research
2. Brainstorming ideas and developing or tweaking hypotheses
3. Editing and revising text and grammar, *but it should not be used to generate sentences or paragraphs of text*
4. Applications for AI in your specific research areas should be discussed with your PI. Individual research groups may have other allowances or limitations for the use of AI or gAI.
5. Using certain types of AI software can violate intellectual property and must be discussed with your research advisor prior to use.

It is also important to be transparent about the use of gAI for assignments or in research and to disclose its use. In other words, all instances of gAI should be explicitly acknowledged. For example, ACS Publications has a statement on [Authorship, Author List, and Coauthor Notification](#). ACS Author Guidelines 2023.

Artificial intelligence (AI) tools do not qualify for authorship. The use of AI tools for text or image generation should be disclosed in the manuscript within the Acknowledgment section with a description of when and how the tools were used. For more substantial use cases or descriptions of AI tool use, authors should provide full details within the Methods or other appropriate section of the manuscript.

VIII. Teaching Requirements

Every full-time graduate student must serve for at least two semesters as a Teaching Assistant (TA). Satisfactory performance of assigned teaching duties is expected of all TAs. General TA duties may include: supervising undergraduate students, preparing reagents/equipment for laboratory courses, grading of laboratory reports, maintaining laboratory cleanliness, leading recitations or discussion sections, and any other duties assigned by the Teacher of Record. Student, peer, and/or supervisor evaluations may be used to evaluate TA performance. Being late or absent from your TA assignment and failing to maintain laboratory safety standards (*e.g.*, not following and enforcing dress code or personal protective equipment policies) are considered serious breaches of responsibility. Failure to meet TA responsibilities will result in a written reprimand in the graduate student's file. A second reprimand may potentially result in partial loss of stipend and, at the discretion of the Graduate Affairs Committee, possible dismissal from the graduate program. Full-time graduate students may not be employed outside of the Department of Chemistry & Biochemistry.

IMPORTANT: Progress in research is a critical part of any graduate program. Departmental teaching assistantships will not be extended to Ph.D. candidates beyond twelve regular semesters (6 years) of residence or to M.S. candidates beyond a third year of residence, except under extenuating circumstances. Any graduate student desiring to be considered for a teaching assistantship beyond this period may request one additional semester of TA support by submitting a written petition and a letter of support from their research advisor to the Graduate Affairs Committee.

IX. Thesis or Dissertation Requirements

Instructions for the preparation and submission of a thesis or dissertation are given in the Bulletin of the Graduate School, the [ACS Style Guide for Authors](#) being the primary source. When this Guide does not address particulars in a thesis or

dissertation, then Turabian and/or the Graduate School's printed guidelines are to be followed. The student is strongly advised to check with the Graduate office on matters of formatting the thesis or dissertation in advance.

A. Manuscript requirement (Ph.D. degree only)

There is no formal manuscript requirement, however, the student's Ph.D.-committee will consider progress toward and/or the actual publication of research results at the Ph.D.-Defense Examination and, if the student has no publications, may require that a draft manuscript suited for eventual peer-review and publication be provided before rendering a passing decision.

B. Thesis or Dissertation defense

After completion of each of the requirements described above as well as all other requirements set forth by the research advisor, the Department of Chemistry & Biochemistry, and the Graduate School, the student will work with their research advisor to prepare an acceptable thesis or dissertation. Once the research advisor is satisfied with the quality of the thesis or dissertation, the student will work with their PhD Dissertation Committee (VI-B-4) to schedule the defense. Students will register for 1 credit of CHE 5150 in the semester they plan on defending. A complete printed copy (and pdf copy) of the thesis or dissertation will be distributed to the student's committee at least seven days prior to the defense. The date, time, and location of the public presentation (comprised of a 50-minute formal seminar followed by Q&A) will be formally announced 12 working days prior to the defense and approved by the Graduate School. After the public presentation, a closed defense will be held before the student's committee and other interested members of the graduate faculty. Successful completion of this defense will be contingent upon the student making revisions to the thesis or dissertation as directed and voted on by the committee. After successful completion of the thesis, it is the student's responsibility to provide a final .pdf copy of the dissertation and coordinate ordering with the Graduate Program Coordinator three final bound hardcopies (one each for student, PI, and for display in the departmental conference room).

It is the responsibility of the student to complete all of the required materials set forth by the Graduate School and meet the appropriate deadlines for graduation in a semester. Up to date information is available at the Graduate Schools "Completing your Degree" webpage: <https://www.baylor.edu/graduate/index.php?id=958619>.

It is the responsibility of the student to obtain all department evaluation forms and signatures necessary for completion of the dissertation defense. These are to be turned into the GPC upon completion.

X. Departmental Clearance

Prior to graduation, all candidates for the M.S. or Doctor of Philosophy degree must comply with Chemistry Department regulations concerning laboratory checkout. The checkout procedure includes a satisfactory inspection of the candidate's work area by the Research Advisor and by an Environmental Health and Safety representative, completion of the Chemistry and Biochemistry Department Clearance Form, and return of any keys or Departmental or laboratory resources. All laboratory notebooks, generated electronic data or images, and any scientific products of the work will remain at Baylor under the care of the Research Advisor.

Entrance Exam Record

Name: _____

Entered Program: _____

Results

pass/fail

	August	January	April	or: Course Taken
Analytical				
Biochemistry				
Inorganic				
Organic				
Physical				

Research Group Selection

It is important for new graduate students to become familiar with the research of several faculty working in areas of possible interest. Understanding the goals of the research, the techniques to be learned, and the dynamics of interacting with both the advisor and the research group are all important considerations that go into making an informed decision about joining a research group. To facilitate this process, new graduate students are required to arrange brief (~ 3-4 week) rotations in the laboratory of at least three research groups. During each rotation, students should plan to devote the time needed to gain some knowledge of the people, research techniques, and facilities that are unique to respective group. Working in the lab alongside the Research Advisor or a graduate student is not required, though encouraged, with the faculty member's approval. Although a student may have preconceived ideas as to what Division of chemistry (organic, analytical, physical, biochemistry, materials, or inorganic) he/she wants to study, investigating research in other less familiar areas often leads to students to revise their initial choices. Finding a good fit is mutually beneficial to the student and Research Advisor, and multiple discussions with potential mentors are encouraged. Students should make these arrangements by contacting potential Research Advisors directly.

Please secure the signature of each faculty member with whom you arranged a laboratory rotation. Rank order your top three choices in order of preference and turn this into the Director of Graduate Recruiting no later than the last day of classes of the fall semester. The Director in consultation with the graduate faculty will match graduate students to labs as outlined in the Graduate Student Handbook.

Graduate Student Name: _____

I did rotations in the labs of _____ (name)

_____ (signature)

Top three choices of research group (in order):

1) _____

2) _____

3) _____

Matched Research Group: _____ Signature of Research Advisor: _____

Signature of the Graduate Program Director: _____ Date: _____

TEACHING Assistant's Work Evaluation

Department of Chemistry, Baylor University

TA's Name: _____ Course Assignment: _____ Semester: _____

Please evaluate the work of your graduate assistant in each of the areas below. Check the appropriate box and offer comments. Return this to GPD by the end of the semester.

Work Activity	Poor	Acceptable	Good	Very Good	Excellent	Comments
Preparation before & after lab						
Reliability						
Working with students						
Grading duties						
Compliance with all safety rules						
Attitude						
Attendance at TA meetings						
Professional ethics						

Additional Comments:

OVERALL RATING:

Poor: _____ Acceptable: _____ Good: _____ Very Good: _____ Excellent: _____

Signature of professor/staff member: _____ Date: _____

Pre-Candidacy Oral Exam Evaluation

Student _____ Date _____

Rate the following areas on a scale of 1 to 5, with 5 being the highest rating and 1 being the lowest. Make any specific comments in the spaces to the right. **Note:** a score of 3 is usual and respectable and corresponds to an "average" rating. Please use scores of 4 or 5 only for unusually good and exceptional performances, respectively, and leave comments that support such scores.

Note: All of the ratings below are necessary. These ratings are used for student feedback as well as program assessment purposes.

	Relative Rating					Low	Comments
	High	5	4	3	2		
Background knowledge in field							
Grasp of scientific literature							
Preparation of Research Proposal							
Oral Presentation							
Grasp of project methodology							
Overall							

Faculty Signature: _____ Date _____

Circle: **PASS** **FAIL**

Candidacy Oral Exam Evaluation: progress toward publication

Student _____ Date _____

Rate the following areas on a scale of 1 to 5, with 5 being the highest rating and 1 being the lowest. Make any specific comments in the spaces to the right. **Note:** a score of 3 is usual and respectable and corresponds to an "average" rating. Please use scores of 4 or 5 only for unusually good and exceptional performances, respectively, and leave comments that support such scores.

Note: All of the ratings below are necessary. These ratings are used for student feedback as well as program assessment purposes.

	Relative Rating					Low	Comments
	High	5	4	3	2		
Background knowledge in field							
Grasp of scientific literature							
Oral Presentation							
Grasp of project methodology							
Progress towards publication w/reference							
Overall							

Faculty Signature: _____ Date _____

Circle: **PASS** **FAIL**

M.S. Thesis Defense Evaluation - Faculty

Speaker _____ Date _____

Rate the following areas on a scale of 1 to 5, with 5 being the highest rating and 1 being the lowest. Make any specific comments in the spaces to the right. **Note:** a score of 3 is usual and respectable and corresponds to an "average" rating. Please use scores of 4 or 5 only for unusually good and exceptional performances, respectively, and leave comments that support such scores.

Note: All of the ratings below are necessary. These ratings are used for student feedback as well as program assessment purposes.

	Relative Rating					Low	Comments
	High	5	4	3	2		
Amount of research completed							
Quality of research completed							
Grasp of research methodology							
Quality of written M.S Thesis							
Quality of Oral Presentation							
Student's ability to function at the M.S. level							
Overall							

Faculty Signature: _____ Date _____

Circle: **PASS** **FAIL**

Ph.D. Defense Evaluation - Faculty

Speaker _____ Date _____

Rate the following areas on a scale of 1 to 5, with 5 being the highest rating and 1 being the lowest. Make any specific comments in the spaces to the right. **Note:** a score of 3 is usual and respectable and corresponds to an "average" rating. Please use scores of 4 or 5 only for unusually good and exceptional performances, respectively, and leave comments that support such scores.

Note: All of the ratings below are necessary. These ratings are used for student feedback as well as program assessment purposes.

	Relative Rating					Low	Comments
	High	5	4	3	2		
Amount of research completed							
Quality of research completed							
Grasp of research methodology							
Quality of written PhD Thesis							
Quality of Oral Presentation							
Student's ability to function at the PhD level							
Overall							

Faculty Signature: _____ Date _____

Circle: **PASS** **FAIL**