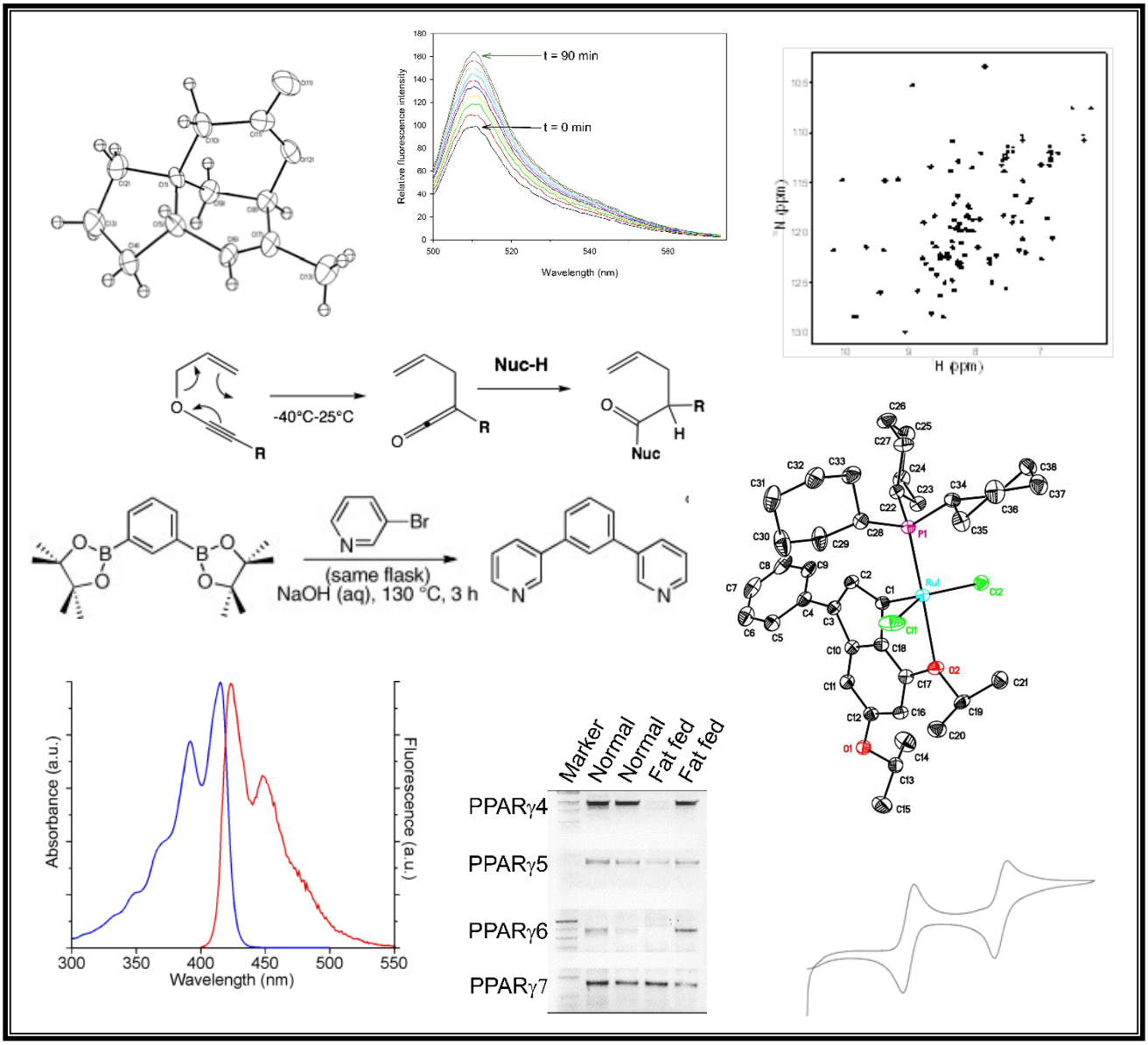
Handbook for Graduate Students

Department of Chemistry and Biochemistry
California State University, Northridge



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1. INTRODUCTION

1.1. Purpose of the Handbook

This handbook is intended to be a reference which can be used to answer various questions about the Chemistry and Biochemistry graduate program. In essence this handbook is also our "*rule book*," and we distribute it to all students and faculty to be sure that everyone is operating by the same rules. The intent is to describe the programs in some detail and to explain the rationale behind them, to delineate the responsibilities of students, faculty committees, faculty members and the administration of the Department, to promote consistency in procedures and standards, and to provide a basis for communication between students, the Graduate Coordinator, and the Chemistry and Biochemistry faculty. The procedural aspects and bureaucratic forms (see appendices) may appear to be a bother, which they certainly are, but they will prevent difficulties which arise from poor record-keeping and if unattended can present even larger problems.

In addition to the Departmental guidelines outlined in this document, the academic regulations and procedures of the University are described in the ***guidelines*** *published by the* ***Office of Graduate Studies*** (http://catalog.csun.edu/graduate-studies/). *These should be followed by all graduate students.*

Also, please note that the Departmental degree requirements may be modified in special circumstances, upon petition to the Graduate Coordinator and approval by the Chemistry and Biochemistry graduate committee.

1.2. Channel of Communication

a. All communications from the students and faculty to the Department administration concerning this handbook should be addressed to the Graduate Coordinator.
b. All course and program advisement must be done in consultation with the Graduate Coordinator. The Thesis Advisor is not permitted to release registration holds for students.
c. All communications from the students concerning teaching assistantship, tuition waiver, and office space should be addressed to the Department Chair.
d. Any conflict between the graduate student and the Thesis Advisor should be brought to the attention of the Graduate Coordinator and/or the Department Chair.

1.3. Graduate Programs in Chemistry and Biochemistry

The Chemistry and Biochemistry Department currently offers Master of Science Degrees in Chemistry and Biochemistry. The Master of Science in Chemistry allows specialization in the areas of organic, inorganic, physical and analytical chemistry. It is primarily intended for students desiring research-oriented careers in the chemical industry, community college teaching or entry into a Ph.D. program in traditional areas of Chemistry. The Master of Science in Biochemistry prepares students for research-oriented careers in the biotechnology industry, teaching or entry into a Ph.D. program in Biochemistry or related fields.

1.4. Course / Unit Requirements

Both programs require **30** units of graduate study, including the literature seminar, research project and a thesis. The details of such requirements for both programs are as follows (see next page).

COURSE/UNIT REQUIREMENTS

M.S. IN CHEMISTRY

For the Degree:

1. A minimum of 30 units of graduate work including a thesis to be completed within seven years. At least 21 units must be completed in 500- or 600-level Chemistry or Biochemistry courses at CSUN. Up to 6 units may be earned in areas outside of Chemistry with the approval of the Graduate Coordinator.

   a. **Required Courses (7 – 12 units)**

CHEM 500	Chemistry Practicum	1
CHEM 691	Literature seminar	1
CHEM 692	Thesis seminar	1
CHEM 696	Directed Grad. Res.	3-6
CHEM 698	Thesis	1-3

   b. **Electives (18 – 23 units)**
   These should be selected with the approval of the Graduate Coordinator from 400- and 500- level courses and must include at least one course that has a laboratory component. Up to 2 lecture-only courses (directly relevant to the student's research) may be taken outside of the department, with Graduate Coordinator permission. A maximum of 9 units of 400- level courses may be applied toward the 30 units required for the degree.

2. Oral defense of the thesis.

3. Formal approval by the Thesis Committee

M.S. IN BIOCHEMISTRY

For the Degree:

1. A minimum of 30 units of graduate work including a thesis to be completed within seven years. At least 21 units must be completed in 500- or 600-level Chemistry or Biochemistry courses at CSUN. Up to 6 units may be earned in areas outside of Chemistry with the approval of the Graduate Coordinator.

   a. **Required Courses (13 – 18 units)**

500-level Biochemistry courses		6
CHEM 500	Chemistry Practicum	1
CHEM 691	Literature seminar	1
CHEM 692	Thesis Seminar	1
CHEM 696	Directed Grad. Res.	3-6
CHEM 698	Thesis	1-3

   b. **Electives (12 – 17 units)**
   These should be selected with the approval of the Graduate Coordinator from 400- and 500- level courses and must include at least one course that has a laboratory component. Up to 2 lecture-only courses (directly relevant to the student's research) may be taken outside of the department, with Graduate Coordinator permission. A maximum of 9 units of 400- level courses may be applied toward the 30 units required for the degree.

2. Oral defense of the thesis.

3. Formal approval by the Thesis Committee

1.5. Outline of the Master's Degree Program

All credits earned by post-baccalaureate students are subject to evaluation for acceptance for graduate credits in our Department. Of the 30 units required for the degree, **at least 21 must be in residence at CSUN**. An outline describing various stages of progress toward the MS degree is given below and more details can be found in sections 4 and 5 of the handbook.

1. ***Conditionally Proficient:***

   This is the status at which most students enter our program. "Conditional" means that there are several conditions that must be satisfied before becoming a "genuine" graduate student (Proficient). Those conditions are given below.

   a. Proficiencies:
      A student must demonstrate satisfactory facility with organic, physical, analytical, inorganic and biochemistry, by either passing the proficiency exams or taking a course in an appropriate area as arranged with the Graduate Coordinator. For more details, see sections 4.1 and 4.2.

   b. Selection of Thesis Advisor:
      Every student will need to choose a (full time) faculty member with whom that student will do their thesis research. The student should inform the Graduate Coordinator of their decision after a Thesis Advisor has been selected. See section 4.5 for more details.

2. ***Proficient:***
   After all the conditions noted above are satisfied, a student is advanced to the proficient status. **Please note that a student must be in proficient status and have selected a Thesis Advisor before they are allowed to register for any 600-level course (CHEM 691, 692, 696 or 698).**

3. ***Advancement to Candidacy and Graduation:***
   Every student must give a presentation to their Thesis Committee about a year before they expect to finish (see section 7.1 for further details). The student should also regularly monitor their online Degree Progress Report (DPR) to ensure the degree requirements are on track and the courses being taken are correctly credited toward the degree. Finally, an application for graduation and a diploma fee must be filed the semester prior to the one in which the degree is to be granted. This document can be obtained through the **Forms** page on the Graduate Studies website (https://www.csun.edu/graduate-studies/graduate-student-forms).

2. PROFESSIONAL CONDUCT

All graduate students are expected to act as responsible citizens of the University and the Chemistry and Biochemistry Department. This responsibility is expected in the conduct of research, interactions with faculty and other students, teaching, and the use of University facilities.

2.1. Misconduct in Science

The National Academy of Sciences has defined misconduct in science as "fabrication, falsification, or plagiarism in proposing, performing or reporting research. Misconduct in science does not include

errors of judgment, errors in the recording, selection, or analysis of data, differences in opinions involving the interpretation of data, or misconduct unrelated to the research process."

Any direct culpable involvement by a graduate student in any act of academic dishonesty or misconduct defined above will irrevocably impair the trust that exists between the faculty and the graduate student, and can lead to further investigation of such misconduct and appropriate actions by the Department and the University.

2.2. Use of University and Departmental Facilities

University and Departmental resources are not for personal use. These resources include departmental instrumentation, chemicals and other consumables, telephones, copying equipment, and electronic services such as computers, computer accounts and online services.

2.3. Instructor-Student Conduct

Since many graduate students are both instructors and students in the University they have a particularly unique responsibility with respect to proper professional conduct. The University has various guidelines and policies regarding instructor-student relationships. Copies of these guidelines are available from appropriate campus offices. Such guidelines are summarized as follows:

In evaluating and assigning grades for credit, instructors act on behalf of the University faculty and with its authority. Personal relationships with students compromise the objectivity and integrity with which an instructor discharges this responsibility and are out of place and prohibited. Examples include romantic, sexual, or financial relationships.

2.4. The Workplace

All graduate students have the right to a workplace free of harassment (sexual, racial, etc.). Violations of this principle can be reported to the Chair or the Graduate Coordinator, and appropriate actions will be taken.

Graduate students are also expected to conduct themselves <u>professionally and courteously in their interactions with other students and with faculty</u>. Breaches of this code of conduct can result in formal disciplinary action, which may include automatic failure of an associated course or dismissal from the graduate program.

3. TEACHING

3.1. Financial Support

Financial support in the form of a teaching assistantship is available to qualified candidates. Decisions on teaching assistantships are made by the Chair of the Chemistry and Biochemistry Department in consultation with the Graduate Coordinator. In the first year, performance in the proficiency exams and the course work are normally the criteria used to award teaching assistantships. In later years, the student's performance as a Teaching Assistant (based on student evaluations of the previous teaching assignments and evaluation by the course coordinator), along with performance in course work and literature seminar are considered. Since the source of funds

for this support is not under the control of the Department, the award of teaching assistantships is subject to the availability of funds. If available, support may be extended to any student, at the discretion of the Chair. Additionally, a few tuition awards are sometimes available through the Office of Graduate Studies. Decisions on these tuition awards are made by the Department Chair in consultation with the Graduate Coordinator.

It is Department policy that it will normally support graduate students with a teaching assistantship for NO MORE THAN THREE years after they are enrolled in the graduate program.

3.2. Teaching Responsibilities and Evaluations

Teaching is an important *professional* responsibility and all Teaching Assistants (TAs) are expected to take this assignment seriously. The responsibilities include:

a. The TA must know the concepts and course material well. To achieve this purpose, the instructor may require the TA to attend lectures, do experiments, and read additional information.
b. The TA must treat students with uniform courtesy regardless of gender, sexual orientation, race or ethnicity.
c. The TA must be reliable: 100% attendance is expected in class and staff meetings. If, under extreme circumstances, the TA is unable to teach on a particular day, it is the TA's responsibility to find a qualified substitute (who has experience teaching that specific course).
d. The TA must be familiar with, and adhere to, the course standards.
e. The TA must grade consistently, fairly, promptly, and adhere to the course standards.
f. Lab TAs are responsible for the safety of their students and must enforce safety standards set by the Chemistry and Biochemistry Department.

4. EARLY IN THE MS PROGRAM / CONDITIONALLY PROFICIENT STATUS

Most of our graduate students enter our graduate program as a conditionally proficient student. It means that there are several conditions which must be satisfied before a student becomes a fully proficient or "genuine" graduate student. These conditions include satisfying the requirements of the proficiency exams and selecting a Thesis Advisor.

4.1. Proficiency Exams or Course Work for MS Biochemistry Students

a. Entering graduate students who have obtained their Bachelor's degree from a university other than CSUN must take proficiency exams to demonstrate competency in undergraduate preparation. The students in the MS Biochemistry program must demonstrate proficiency in **biochemistry** and **organic** chemistry, as well as (one of) **physical**, **analytical** or **inorganic** chemistry either through satisfactory scores on American Chemical Society exams or through course work in these areas. Any entering student may defer taking one or all of the proficiency exams if they agree to enroll in the respective preparatory undergraduate courses as recommended by the Graduate Coordinator. *Considering that a one-semester course in organic, physical, analytical chemistry or biochemistry does not cover all the material which will be tested in the proficiency exam, it is the responsibility of the student to study on their own in preparation for the proficiency exam (if the student decides to take the exam).*

b. Entering graduate students who have obtained their Bachelor of Science degree in Chemistry

or Biochemistry from CSUN, if obtained within a year of entering the graduate program, are required to take the proficiency exams only if the grades in CHEM 334 and CHEM 461/462 (average grade from both courses) or CHEM 464, as well as (one of) CHEM 351 or 352, CHEM 401 or CHEM 422 are less than B in the respective areas. See details about exam requirements in section 4.1.a above.

c. A MS Biochemistry student who enters the graduate program and fails the **organic** chemistry proficiency exam must take CHEM 334. A grade of B or better in CHEM 334 will satisfy this (organic) proficiency requirement. Please note that graduate students are not permitted to formally enroll in any 300-level courses if they are supported by financial aid or by the university. A student may enter into an audit agreement with a professor, however, for purposes of demonstrating proficiency in that subject (if the professor is willing to participate). See Appendix for the "Graduate student enrollment agreement for 300-level courses" form.

d. A MS Biochemistry student who enters the graduate program in the Fall semester and fails the **biochemistry** proficiency exam must take CHEM 461 or 464. If that student gets a grade of B or better in CHEM 461 or 464, then that student satisfies the biochemistry requirement. A student who enters the M.S. Biochemistry program in the Spring semester, and fails the biochemistry proficiency exam must take 464, and a grade of B or better in CHEM 464 will satisfy the biochemistry proficiency requirement.

e. A student who enters the graduate program in the Fall semester and fails the **physical** chemistry proficiency exam will be strongly advised to take CHEM 351. A grade of B or better in CHEM 351 will satisfy the physical chemistry proficiency requirement. Otherwise, the student will be asked to take and pass the proficiency exam when it is offered next time or take CHEM 352 and get a grade of B or better to satisfy the proficiency requirement in physical chemistry. A student who enters the graduate program in the Spring semester and fails the **physical** chemistry proficiency exam will be strongly advised to take CHEM 352 and will adhere to similar criteria for course grade and proficiency exams as described above. Please note that graduate students are not permitted to formally enroll in any 300-level courses if they are supported by financial aid or by the university. A student may enter into an audit agreement with a professor, however, for purposes of demonstrating proficiency in that subject (if the professor is willing to participate). See Appendix for the "Graduate student enrollment agreement for 300-level courses" form.

f. A student who enters the graduate program in the Fall or Spring semester and fails the **inorganic** chemistry proficiency exam will be advised to take CHEM 401 in the Spring semester. If that student earns a grade of B or better in CHEM 401, then that student satisfies the inorganic chemistry proficiency requirement.

g. A student who enters the graduate program in the Fall or Spring semester and fails the **analytical** chemistry proficiency exam will be advised to take CHEM 422. A grade of B or better in CHEM 422 will satisfy this (analytical) proficiency requirement.

4.2. Proficiency Exams or Course Work for MS Chemistry Students

a. Entering graduate students who have obtained their Bachelor's degree from a university other than CSUN must take proficiency exams to demonstrate competency in undergraduate preparation. The students in the MS Chemistry program must demonstrate proficiency in any three of **organic**, **physical, analytical, biochemistry** and **inorganic** chemistry either

through satisfactory scores on the American Chemical Society exams or through course work in these areas. One of those subjects should include the subdiscipline in which the student intends to perform research. Any entering student may defer taking one or all of the proficiency exams if they agree to enroll in the respective preparatory undergraduate courses as recommended by the Graduate Coordinator. *Considering that a one-semester course in organic, physical, analytical chemistry or biochemistry does not cover all the material which will be tested in the proficiency exam, it is the responsibility of the student to study on their own in preparation for the proficiency exam (if the student decides to take the exam).*

b. Entering graduate students who have obtained their Bachelor of Science degree in Chemistry or Biochemistry from CSUN, if obtained within a year from entering the graduate program, are required to take the proficiency exams only if the grades in (any three of) CHEM 334, CHEM 351 or 352, CHEM 401, CHEM 422, and CHEM 461/462 (average grade from both courses) or CHEM 464 are less than B in the respective areas. See details about exam requirements in section 4.2.a above.

c. A MS Chemistry student who enters the graduate program and fails the **organic** chemistry proficiency exam will be advised to take CHEM 334. A grade of B or better in CHEM 334 will satisfy this (organic) proficiency requirement. Please note that graduate students are <u>not</u> permitted to formally enroll in any 300-level courses if they are supported by financial aid or by the university. A student may enter into an audit agreement with a professor, however, for purposes of demonstrating proficiency in that subject (if the professor is willing to participate). See Appendix for the "Graduate student enrollment agreement for 300-level courses" form.

d. A MS Chemistry student who enters the graduate program in the Fall or Spring semester and fails the **biochemistry** proficiency exam will be advised to take CHEM 464. If that student earns a grade of B or better in 464, then that student satisfies the biochemistry proficiency requirement.

e. A student who enters the graduate program in the Fall semester and fails the **physical** chemistry proficiency exam will be strongly advised to take CHEM 351. A grade of B or better in CHEM 351 will satisfy the physical chemistry proficiency requirement. Otherwise, the student will be asked to take and pass the proficiency exam when it is offered next time or take CHEM 352 and get a grade of B or better to satisfy the proficiency requirement in physical chemistry. A student who enters the graduate program in the Spring semester and fails the **physical** chemistry proficiency exam will be advised to take CHEM 352 and adhere to similar criteria for course grade and proficiency exams as described above. Note that graduate students are <u>not</u> permitted to formally enroll in 300-level courses if they are supported by financial aid or by the university. A student may enter into an audit agreement with a professor, however, for purposes of demonstrating proficiency in that subject (if the professor is willing to participate). See Appendix for the "Graduate student enrollment agreement for 300-level courses" form.

f. A student who enters the graduate program in the Fall or Spring semester and fails the **inorganic** chemistry proficiency exam will be advised to take CHEM 401 in the Spring semester. If that student earns a grade of B or better in CHEM 401, then that student satisfies the inorganic chemistry proficiency requirement.

g. A student who enters the graduate program in the Fall or Spring semester and fails the **analytical** chemistry proficiency exam will be advised to take CHEM 422. A grade of B or better in CHEM 422 will satisfy this (analytical) proficiency requirement.

4.3. Enrollment in CHEM 500

All students are required to take and pass CHEM 500 (Chemistry Practicum) during their first fall semester.

4.4. Enrollment in CHEM 599

A conditionally proficient student is permitted to enroll in CHEM 599A and/or 599B for one semester only. Up to three units of CHEM 599 can be counted toward the student's "elective" courses. Although the name of CHEM 599 is "Independent Study", these are credits for active thesis research. As such, the student's Thesis Advisor must complete a form that acknowledges they will allow the student to enroll in those units. The form is sent to the department office, at which point the office will provide a permission number that will permit the student to enroll in CHEM 599.

4.5. Selection of Thesis Advisor

A student's Thesis Advisor is the faculty member with whom the student chooses to work for their thesis research. New students are asked to inform themselves about the research interests of those faculty members whose research work appears to be of interest to the student. It can be accomplished by visiting their web pages, requesting reprints from them, and by visiting those professors. Selection of a Thesis Advisor can be completed as early as the end of the student's first semester at CSUN but no later than the end of the second semester of enrollment in the graduate program. The student must interview **at least three** faculty members and select a Thesis Advisor *after* those interviews (even if the student has already worked with a faculty member as an undergraduate and plans to continue in that lab). When a student has selected a faculty member as the Thesis Advisor, and the faculty member has agreed to accept that student, the **CHEM1** form should be submitted to the departmental office after obtaining signatures from the interviewed faculty and the faculty member selected as the Thesis Advisor.

At the time a faculty member is selected as the Thesis Advisor, the student should have an in-depth discussion with that faculty member about the nature and scope of the research project, the research work to be performed that will constitute the Master's thesis research, and other expectations the Advisor has for the student.

The student and Thesis Advisor normally work together very closely, and each has a vital interest in the progress of their collaboration. It is not surprising, however, that in a small fraction of cases, a difference of opinion or divergent changes of interest develop, and the parties agree to disagree, resulting in the student's choice of a new Thesis Advisor. In such a situation it should be understood that this change will likely lengthen the time it will take the student to graduate.

Conditionally proficiency graduate students should not be doing research in areas in which they did not pass their proficiency exams.

4.6. Continuation in a Lab Where Undergraduate Research Was Performed

In some cases incoming graduate students intend to continue performing research in a lab in the Department of Chemistry and Biochemistry at CSUN where they did undergraduate research (although please note carefully section 4.5 (above) for details on choosing a Thesis Advisor). It is important for both the student and thesis advisor to understand that their graduate project should be completely different than their undergraduate project. In rare cases that their graduate project may be a continuation of their undergraduate research project, none of the data obtained as an undergraduate can be included in the thesis. Additionally, it should be clear that the quantity and quality of work performed as a graduate student should stand alone as a complete thesis project.

5. PROFICIENT STATUS

Once a student has satisfied the conditions noted in section 4.1 or 4.2, they are advanced to "proficient status." The proficient graduate student will now be working simultaneously on finishing their course work, their literature seminar, and their thesis research in order to make progress toward graduation. Please note that sections 4.5 – 4.6 still apply after status change.

5.1. Literature Seminar

A student should fulfill the requirement of literature seminar (CHEM 691) no later than two semesters after achieving proficiency. The literature seminar should be based primarily on current literature and should be significantly different from the chosen thesis topic (or research or professional activities undertaken prior to joining the graduate program). The topic cannot be the same or similar to other seminars presented in that semester or the previous two semesters. Please refer to the "Faculty Expectations" letter (provided to students in advance of the semester in which they will present their seminar) for important details. The student should discuss the seminar topic with the Thesis Advisor and Seminar Coordinator and seek their approval of the topic; they should also continue to have discussions and seek guidance from the Thesis Advisor and/or the Seminar Coordinator while preparing for the seminar. The scheduling of the seminar should be made with the Seminar Coordinator before that semester.

The literature seminar should be scheduled for the semester immediately following entry into proficient status (or, at latest, the subsequent semester). A sign-up for seminar dates is generally made available to students during the summer for fall seminars or late fall for spring seminars. It is the responsibility of the student to ensure they obtain a seminar date.

An abstract of the seminar must be given to the Seminar Coordinator at least one week before the seminar so that it can be distributed to the faculty before the scheduled date. The abstract should contain a title, the student's name, a summary of the seminar presentation that is no longer than 350 words (and provide the word length), a bibliography of a maximum of five of the most pertinent references in their talk and include a separate section of 100 – 150 words in which a brief summary of the student's research project is provided (with the intention of distinguishing it from their literature seminar topic).

The seminar should be limited enough in scope so that major portions of the presentation are backed by hard facts, experimental observations or data, clear explanation of the results and their discussion. It should be presented like an oral review article, in which many different, current sources

are discussed and the student contributes their own perspectives and evaluation of the articles. While presenting the literature seminar, the student is expected to demonstrate a critical understanding and mastery of the subject matter. The grade in the seminar will be based on the student's performance in (i) organization, (ii) quality of chemical / biochemical content, (iii) understanding of scientific material, (iv) style of delivery and use of visual aids, and (v) handling of audience questions. The evaluation will be made by the faculty present at the seminar. The final grade will be assigned by the Seminar Coordinator (based on scores provided by the faculty) and relayed to the student along with a summary of faculty comments. Students should ask the Seminar Coordinator for the scoring rubric as part of their advance preparation for the seminar.

5.2. Thesis Work and Committee – CHEM 696/698

a. Soon after a student has attained proficient status and has selected a Thesis Advisor, they should select two other faculty members to serve on their Thesis Committee, following agreement between the student and the Thesis Advisor on the composition of the committee. Participation on a student's thesis committee is at the discretion of those additional faculty members, and as such a student should have a backup choice in case their first choice declines. At least one of the two members selected for the committee must be from the Chemistry and Biochemistry Department. Although the Thesis Advisor will act as the student's principal advisor, the other two faculty will also be available for guidance or advice for the duration of the work. At this point the student will also need to select a "working title" (if they have not already done so) for the research project, complete and submit the **Thesis/Graduate Project Planning Form** via the **Electronic Thesis and Dissertation website** (https://academics.csun.edu/etd/login).

b. A maximum of six units of CHEM 696 (Directed Graduate Research) is allowed. Additionally, a maximum of three units of CHEM 698 (Thesis) is allowed. A student can enroll in all three units of CHEM 698 in one semester alone; however, no more than two different enrollments in CHEM 698 can be used to earn three units credit in CHEM 698, and the thesis must be completed and submitted within 2 years of the first enrollment in CHEM 698.

c. In order to enroll in CHEM 696 or 698 the student's Thesis Advisor must complete a form that acknowledges they are allowing the student to enroll in those units. The form is sent to the department office, at which point the office will provide a permission number that will permit the student to enroll in CHEM 696 and/or 698.

6. COURSEWORK AND GPA

6.1. Course and Program Advisement

All MS Chemistry and MS Biochemistry program students have a registration hold on their account before each new semester. After discussing their planned courses with their Thesis Advisor, the student should make an appointment for advisement with the Graduate Coordinator. Only the Graduate Coordinator can release the registration hold; the student should therefore plan accordingly. Note that the Thesis Advisor is frequently not fully aware of all the rules for the graduate program. The advisement session with the Graduate coordinator must therefore be considered the final word on advisement for that semester, as it will consider both the Thesis Advisor's suggestions and the graduate program requirements. This advisement is an opportunity to get both course and program advisement,

so students are encouraged to take advantage of their appointment to plan multiple semesters and ask many questions.

6.2. Course Work: 400- and 500-level

All credit earned by post-baccalaureate students is subject to evaluation for acceptance for graduate credit in our program. Of the 30 units required for the degree, at least 21 must be earned in residence at CSUN. A graduate student in the department is generally considered to be full-time if they enroll in 6 units per semester (which may include a combination of coursework and research/thesis units), with the understanding that most time outside of coursework or teaching will be spent in the research lab, whether or not the student is enrolled in research units during that semester. Note that international students have a 8-unit minimum each semester, with some exceptions possible toward the end of their degree.

Elective courses should be selected with the approval of the Graduate Coordinator from 400- and 500- level courses and must include at least one course which has a laboratory component. A maximum of nine units of 400- level courses may be applied toward the 30 units required for the degree. It should also be noted that enrollment in all 500-level Chemistry and Biochemistry courses is by permission number only, so students should plan in advance of their registration date to contact the course instructor about obtaining a permission number or placing themselves on the wait list.

MS Chemistry and Biochemistry students are permitted to take up to 2 courses outside the department that have direct relevance to the student's research project, with permission of the Thesis Advisor and the Graduate Coordinator. These courses cannot be used to fulfill the laboratory requirement for the degree, except under very special circumstances and with permission from the Graduate Committee.

A graduate student may enroll in CHEM 599 (up to three units) for **one semester only** and can only do so when they are in conditionally proficient status. See also section 4.4.

6.3. Course Work: 600-level

A student **must have proficient status** before they are allowed to register for 600-level courses (CHEM 691, 692, 696 or 698). See section 5 for more details. Note that enrollment in any 600-level course is by permission number only.

6.4. GPA requirements and implications

Students must maintain a minimum 3.0 GPA (B average) in the formal program and the cumulative grade point average once admitted to the program. No grade below a "C" can be counted in the formal program. Any grade of "C-" or below in the formal program must be repeated after an approved course repeat form has been filed. If the student does not receive "C" or better on the second attempt, the student will be disqualified from the program. A maximum of 6 units in the formal program may be repeated at the graduate level. The repeat grade will appear on the transcript.

If a student's cumulative GPA moves below the 3.0 minimum, they will be placed on Academic Probation during the semester immediately following the GPA change. If the student is unable to raise their cumulative GPA above 3.0 by the end of that semester, they will be disqualified from the graduate program.

7. ADVANCEMENT TO CANDIDACY AND GRADUATION

A student is advanced to candidacy when all degree requirements listed in the Degree Progress Report (DPR), aside from the thesis, have been completed. An application for the Master's degree along with the diploma fee (https://www.csun.edu/graduate-studies/graduate-student-forms) should be filed with Admissions and Records during the semester before the degree is granted.

7.1. Research Progress Presentation to Committee

Approximately one year before the student expects to finish their degree, a meeting should be held between the student and the Thesis Committee to examine the student's progress toward the degree. The student should prepare a brief presentation that describes progress made, challenges met, and plans for what must still be completed. At that time the Thesis Committee will evaluate the student's accomplishments, and will decide what additional experimental work is needed before the student is ready to write the thesis. If necessary, this meeting may be repeated over several semesters.

7.2. Thesis Preparation

When a student's Thesis Advisor (with input from the Thesis Committee) agrees that the student has accomplished enough work and the data collected are sufficient to write a Master's thesis, the student should start writing the thesis describing the research work and results. While writing the thesis, the student should have frequent discussions with the Thesis Advisor both on the organization and the content of the thesis.

The thesis must be prepared in accordance with the guidelines set by the Office of Graduate Studies (https://www.csun.edu/graduate-studies/thesisprojectdissertation-formatting-guidelines). Students should consult that office while preparing the thesis, as there are several deadlines associated with first and final drafts.

A student will prepare a word-processed **well-edited draft** and submit it to their Thesis Advisor for examination and revision. This draft will be written in an accepted journal-format style with results, tables, diagrams, graphs, etc., included as appropriate. It must also adhere to the formatting guidelines defined by the university, and the draft must be submitted for evaluation to Graduate Studies in advance of the mid-semester deadline. After incorporating the corrections/suggestions made by the Thesis Advisor (several iterations will be necessary), the **near final draft** must be given to the Thesis Committee at least *two weeks prior to the thesis seminar (and defense)*. In addition, a PDF of this **near-final** version must be submitted to the Graduate Coordinator *at least one week before the seminar*. The Graduate Coordinator will make the file available to all Chemistry and Biochemistry faculty so that they will have the opportunity to examine the thesis before the thesis defense.

7.3. Thesis Seminar and Defense

The Chemistry and Biochemistry Department requires, as part of the procedure by which a thesis is approved, a formal oral defense of the thesis by the student. It is done in the form of a seminar describing the results of the student's thesis work after the project is completed. If the thesis defense is carried out during the regular school year, the seminar must be scheduled through the Seminar Coordinator (see similar guidelines for submission of abstract, etc, described in

section 5.1). If the thesis defense is carried out in the summer, it is incumbent upon the student to work with their Thesis Committee and the departmental office to schedule a date and time for the seminar. The thesis seminar should be announced to the Department faculty at least a week before the scheduled date. After the seminar, the Thesis Committee may have a private meeting with the student to discuss their evaluation of the thesis, and necessary corrections to be made.

7.4. Final Thesis Submission

After the corrections are made, and the Thesis Committee's concerns (if any) are satisfied, the student will obtain the online approval from faculty. Obtaining the physical signatures of the Thesis Committee members on the *signature page* (printed on proper thesis paper) is now optional. The **final thesis** is then submitted electronically to the Office of Graduate Studies (https://academics.csun.edu/etd/login). *Before* performing the submission, however, it is critically important for the student to discuss with their Thesis Advisor whether or not the thesis should be placed under **"embargo"**, and if so, for how long. A Thesis Advisor might want the contents of the thesis embargoed for a period of time in order to allow for publication of the results before it is made available globally online. It should be noted that the final grade for the thesis (CHEM 698) will be assigned by the entire thesis committee (50% of the grade from the research mentor, and 50% from the rest of the committee).

CONGRATULATIONS ON COMPLETING M.S. STUDIES AT CSUN!

PROGRESS CHECK LIST FOR MS IN CHEMISTRY OR BIOCHEMISTRY

1. Achieving proficient status			
		Admission as a Conditionally Proficient student	
		Proficiencies satisfied, either by examination or by course work (indicate semester completed) (note: MS Chemistry must complete any three, MS Biochemistry must complete biochemistry, organic and one other chemistry)	
			Analytical
			Biochemistry
			Inorganic
			Organic
			Physical
		Choose Thesis Advisor and reach an agreement on a research project (use form CHEM1, give to departmental office)	
		Request or confirm proficient status from the Graduate Coordinator	
2. After proficient status is achieved			
		Complete formal course work	
			CHEM 500 (Chemistry Practicum, 1 unit)
			Elective courses: a total of at least 18 units of approved 400 or 500-level courses. For the MS Biochemistry degree, this must include at least 6 units of 500-level biochemistry courses. For both degrees, a maximum of 9 units of 400-level courses and up to 2 lecture-only courses taken outside of the department (with Graduate Coordinator permission) may be applied to the unit total for the degree.
			400- or 500-level laboratory class
			CHEM 691 (Literature Seminar in the semester after gaining proficiency status)
			Meet with Thesis Committee (at least once) approximately one year before expected MS completion date to present research progress
			CHEM 696 (Directed Graduate Research – maximum 6 units)
			CHEM 698 (Thesis – maximum 3 units in no more than two semesters)
			CHEM 692 (Thesis Seminar)
		Select Thesis Committee	
		Initiate thesis paperwork via the Electronic Thesis & Dissertation system (academics.csun.edu/etd/)	
3. For graduation			
		Check DPR to ensure that all of your course / unit requirements have been met	
		Check DPR to ensure there are no remaining incomplete (I) or report in progress (RP) grades	
		Complete application for graduation and pay diploma fee (one semester before finishing)	
		Preparation and completion of thesis	
			Write your thesis and work closely with Thesis Advisor during editing process
			Submit near-final draft on ETD before the deadline (check Grad Studies site) and obtain approval from the Graduate evaluators
			At least two weeks prior to thesis seminar: give well-edited, near-final draft to Thesis Committee to read
			At least one week prior to thesis seminar: provide the Graduate Coordinator with a PDF of your near-final draft to post online for department faculty
			Submit final thesis (after committee approval) to ETD before the end-of-semester deadline

Graduate student enrollment agreement for 300-level courses

Department of Chemistry & Biochemistry, CSU Northridge

Student: please complete this form (including instructor signature) and give to the Graduate Coordinator NO LATER THAN the end of the third week of the semester in which this course is being taken.

Student name: _____ Student ID#: _____

Course (please select one): CHEM 334 Semester: _____

CHEM 351

CHEM 352

Instructor: _____ Course ticket #: _____

Graduate student contract: I, the undersigned, agree to attend this section of _____ (course name), and complete the same assignments / exams as students formally enrolled in this course, with the understanding that I am doing so for subject proficiency purposes, as a component of my graduate program requirements. I understand that a final grade of B or higher will indicate proficiency in this subject. If I receive lower than a B, I will have to re-take the course or take the equivalent ACS exam, as long as I am in compliance with the maximum number of attempts outlined in the graduate handbook.

_____ _____

Graduate student signature Date

Instructor contract: I, the undersigned, allow this graduate student to fully audit the course. I will provide the student access to the Canvas course page and will grade all assignments / exams in the same way as students who are formally enrolled in this course. A final grade for the course will be provided to the Graduate Coordinator at the end of the semester, to be used in evaluating the student for subject proficiency purposes.

_____ _____

Instructor signature Date

****

Internal use – to be completed by the Graduate Coordinator

Final course grade: _____

Form CHEM1

<u>Selection of Thesis Advisor</u>

Department of Chemistry and Biochemistry

California State University Northridge

From: _____ Date: _____

To: Graduate Coordinator:

After interviewing the following three faculty members, I have selected Dr. _____ as my Thesis Advisor, and he/she has agreed to be my mentor for my thesis research.

Signature of Thesis Advisor: _____

_____

(Print name)

Signatures of faculty members interviewed:

_____

_____

_____