Department of Chemistry & Biochemistry
California State University, Los Angeles

GRADUATE HANDBOOK

Revised June, 2019

Chair's Greeting

On behalf of the University, the College of Natural and Social Sciences, and the Department of Chemistry and Biochemistry, we welcome you as you embark on a two-year commitment to ***master*** a specialized area of chemistry or biochemistry. This mastery will come from your acquisition of both ***enhanced academic knowledge*** through graduate coursework and ***practical laboratory skills*** through your immersion in a research project. You have joined a Department with a long-standing record of excellence in graduate education. We wish you the utmost success and stand ready to help you in any way possible.

Alison McCurdy, Ph.D.
Chair

Krishna Foster, Ph.D.
Associate Chair

GENERAL INFORMATION

Your first major decision will be choosing an area of specialization (Organic/Inorganic Chemistry or Physical/Analytical Chemistry or Biochemistry or Chemical Education). Clearly, this specialization should reflect both your interests and your career goals. Your specialization will dictate which Placement Exams you must take. At the start of the first semester of residence, all incoming graduate students will take a placement exam in their area of specialization and in two other areas of their choice. The purpose of these examinations is for advisement only, that is to help the student, the graduate advisor, and the faculty research mentor to select appropriate courses for the graduate student's program and to indicate areas in need of strengthening.

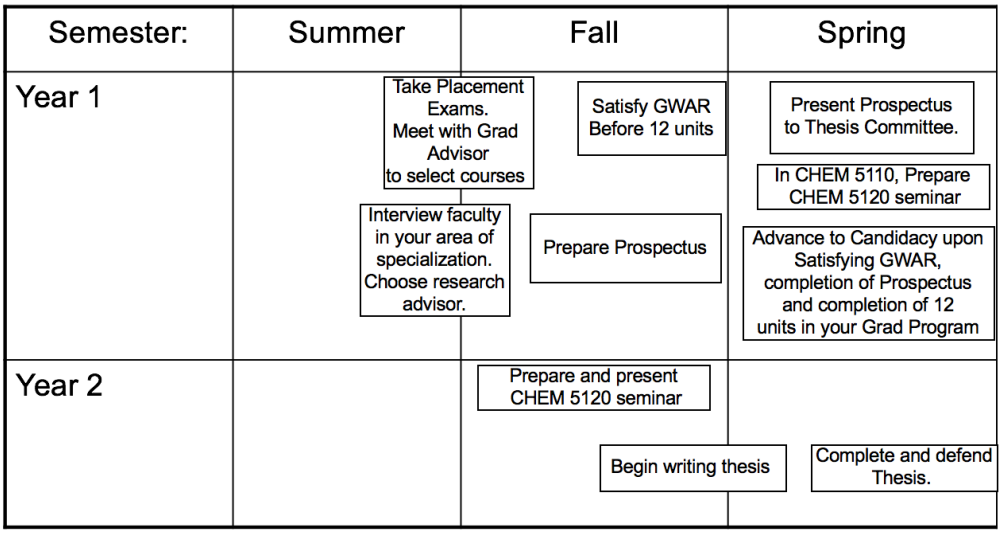
Your specialization will also dictate your required Core Courses. The M.S. degree program encourages breadth of study through its elective courses, so your choice of specialization does not mean you cannot pursue your interests in other areas of chemistry.

Your next step will be to plan your coursework in consultation with the Graduate Advisor and your research advisor. This plan lists courses you will take based on your Placement Exam results, your degree option, your area of specialization, your research project, and your interests. Once the Graduate Advisor and your research advisor approve your Academic Program Plan, it is submitted to the Department of Chemistry and Biochemistry Graduate Program Coordinator. (see Appendix for an example). *You may not change your Program for the Master of Science Degree unless you receive prior approval from the Graduate Advisor and your Research Advisor.*

Another major decision will be choosing a research advisor. This is an important decision which should be made thoughtfully. Learn about the research areas of the faculty by consulting web pages and research publications. While research advisors are associated with some traditional subdisciplines of chemistry because of the courses they teach, each faculty member may have research projects in a variety of disciplines. The most current research projects may not be published or on the web, so it is important to talk to faculty in person about their current research projects. *You will be required to interview with all faculty members in your area of specialization so you will be able to make an informed decision*. You will use the "Chemistry 5910 Registration Form" (see Appendix for an example) to record the signatures and turn it in to the Department of Chemistry and Biochemistry Graduate Program Coordinator. Your learning/research, communication, and personality "style" may work better with some advisors than with others. You are also strongly encouraged talk to students working in the research group.

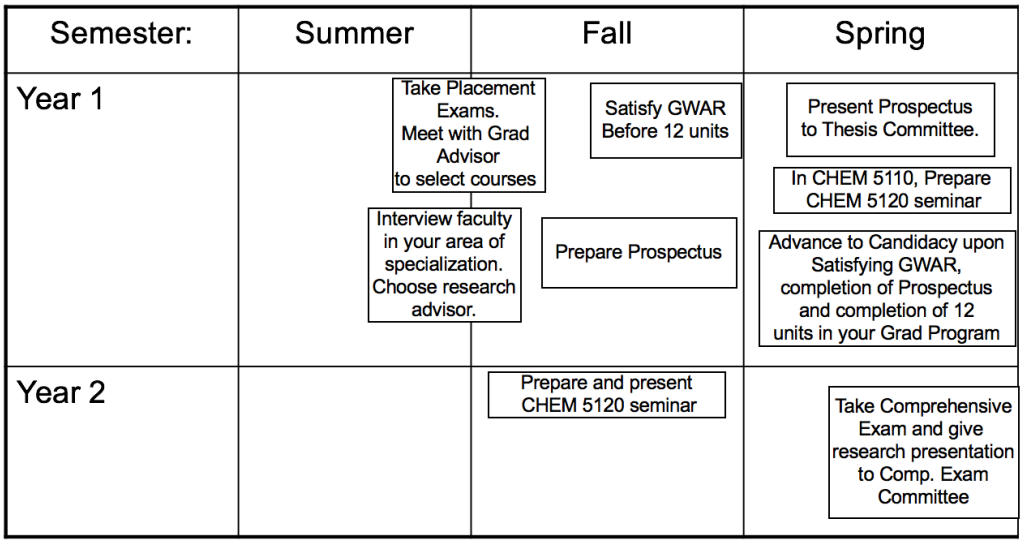
The next couple of pages illustrate key milestons and sample coursework for a 2 year timeline to complete the MS degree.

Two-year timeline for completion of MS in Chemistry (Thesis option or Biochemistry option)



Note: You will be pursuing your research project throughout your degree. Attendance at weekly department seminars is expected. Refer to “roadmaps” for specific courses

Two-year timeline for completion of MS in Chemistry (Comprehensive Exam Option)



Note: You will be pursuing your research project throughout your degree. Attendance at weekly department seminars is expected. Refer to “roadmaps” for specific courses

TWO-YEAR ROADMAPS – sample coursework for MS students

Sample Roadmap for MS students with a thesis culminating experience
MS CHEMISTRY (Total 30 Units)

	Fall_____	Spring_____	Total Units
Year 1	CHEM 5100 (3) Intro to Research	CHEM 5110 (1) Grad Seminar I	
	CHEM 5910 (1) Advanced Lab	CHEM 5910 (1) Advanced Lab	
	Core Requirement 1 (3)	Core requirement 2 (3 units)	
	Elective 1 (3 units)	Core requirement 3 (3 units)	
		[complete prospectus]	
	Total 10 Units	**Total 8 Units**	**18**
Year 2	CHEM 5120 (1) Grad Seminar II	CHEM 5990 (3 units)	
	CHEM 5970 (3 units)	CHEM 5970 (2 units)	
	Elective 2 (3 units)		
	Total 7 Units*	**Total 5 Units***	**12**
	GRAND TOTAL		**30**

Sample Roadmap for MS students with a thesis culminating experience
MS CHEMISTRY (Total 30 Units)

	Fall_____	Spring_____	Total Units
Year 1	CHEM 5100 (3) Intro to Research	CHEM 5110 (1) Grad Seminar I	
	CHEM 5910 (1) Advanced Lab	CHEM 5910 (1) Advanced Lab	
	Core Requirement 1 (3)	Core requirement 2 (3 units)	
	Elective 1 (3 units)	Core requirement 3 (3 units)	
		[complete prospectus]	
	Total 10 Units	**Total 8 Units**	**18**
Year 2	CHEM 5120 (1) Grad Seminar II	Elective 3 (3 units)	
	CHEM 5970 (3 units)	CHEM 5970 (2 units)	
	Elective 2 (3 units)	CHEM 5960 (0 units)	
	Total 7 Units*	**Total 5 Units***	**12**
	GRAND TOTAL		**30**

ACADEMIC POLICIES

University Catalog: Graduate students are governed by University policies and regulations as stated in the *University Catalog* in effect at the time they achieve classified standing (G1, G2 or G3 level), provided that they maintain continuous attendance for registration purposes. Please use the following link to access "Graduate and Post-Baccalaureate Studies: General Information" in the current University Catalog:
http://ecatalog.calstatela.edu/content.php?catoid=26&navoid=2719

On rare occasions, changes are made to our MS requirements. However, the MS requirements for your personalized graduate program are described in the online catalog available at the Cal State LA website. It may be useful for you to print out the Chemistry section of that the online catalog so that you will always have a record of the University, College, and Departmental MS requirements that apply to you.

Department Requirements for Master's Degree

All candidates for master's degrees in chemistry must select either a thesis, biochemistry or comprehensive examination option and declare a specialization in either analytical chemistry, biochemistry, chemical education, inorganic chemistry, organic chemistry, or physical chemistry. For the degree they must fulfill the following minimum requirements.

Unit Requirement: Completion of at least 30 semester units in approved courses, of which at least half (15 units) must be graduate (5000-level) courses.

Requirements for Thesis Option (30-31 units):

(1) Basic Requirements (5 units)
CHEM 5110 – Introduction to Research (3 units)
CHEM 5110 – Graduate Seminar: Chemistry I (1 unit)
CHEM 5120 – Graduate Seminar: Chemistry II (1 unit)

(2) Core Requirements (9-10 units)
9-10 units of core courses in the student's field of specialization. The approved courses are listed in the catalog. Other 4000 or higher level courses can be used as core courses on approval of the faculty advisor and the Department's principal graduate advisor.

(3) Electives (6 units)
Three elective units must be from courses not in the list of core courses for the student's specialization. Three additional units may be taken from either within or outside the area of specialization. Elective courses in the chemical education specialization may include courses that focus on topics pertinent to chemical or science education, including courses offered by the Charter College of Education, selected in consultation with the Department of Chemistry and Biochemistry principal graduate advisor.

(4) Research and Thesis Requirements (10 units)
CHEM 5910 – Advanced Laboratory (2 units)
CHEM 5970 – Graduate Research (5 units)
CHEM 5990 – Thesis (3 units)

Requirements for Biochemistry Option (30 units):

Students in this option must declare upon entrance into the graduate program that they wish to pursue the Biochemistry option. They will adhere to all of the requirements for the biochemistry specialization within the Thesis option.

Requirements for Comprehensive Examination Option (30 units):

(1) Basic Requirements (5 units)
CHEM 5110 – Introduction to Research (3 units)
CHEM 5110 – Graduate Seminar: Chemistry I (1 unit)
CHEM 5120 – Graduate Seminar: Chemistry II (1 unit)

(2) Core Requirements (9-10 units)
9-10 units of core courses in the student's field of specialization.

(3) Electives (9 units)
Six elective units must be from courses not in the list of core courses for the student's specialization. Three additional units may be taken from either within or outside the area of specialization. Elective courses in the chemical education specialization may include courses that focus on topics pertinent to chemical or science education, including courses offered by the Charter College of Education, selected in consultation with the department Graduate Adviser.

(4) Research and Thesis Requirements (7 units)
CHEM 5910 – Advanced Laboratory (2 units)
CHEM 5970 – Graduate Research (5 units)

(5) CHEM 5960 -- Comprehensive Exam (0 units)
Students who select the comprehensive examination (CHEM 5960) should expect to take the exam in the semester they complete all course work on their program and must comply with college and departmental requirements.

Core requirement courses eligible for the graduate program (9 Units Minimum):

Specialization in Analytical and Physical Chemistry:
CHEM 4450 - Introduction to Atmospheric Chemistry (3)
CHEM 4510 - Advanced Analytical Chemistry: Optical Spectroscopy (1,1)
CHEM4520 - Advanced Analytical Chemistry: Analytical Separations and Mass Spectrometry (1,1)
CHEM 4530 - Advanced Analytical Chemistry: Electrochemistry and Surface Techniques (1,1)
CHEM 4460 - Drug Delivery (3)

CHEM 5400 - Quantum Chemistry (3)
CHEM 5410 - Nuclear Magnetic Resonance Spectroscopy (3)

Specialization in Biochemistry:
CHEM 4860 - Bioinformatics and Computational Biology (3)
CHEM 5320 - Protein Structure (3)
CHEM 5330 - Transcriptional Control of Gene Expression (3)
CHEM 5340 - Signal Transduction (3)

Specialization in Inorganic and Organic Chemistry:
CHEM 4200 - Advanced Organic Chemistry I (3)
CHEM 4210 - Polymer Chemistry (3)
CHEM 4850 - Bioinorganic and Bioorganic Chemistry (3)
CHEM 4840 - Drug Discovery and Development (4)
CHEM 5200 - Synthetic Organic Chemistry: Analysis, Design, and Methodology (4)
CHEM 5210 - Organic Structure determination (3)
CHEM 5600 - Advanced Inorganic Chemistry (3)

Specialization in Chemical Education:
Students specializing in chemical education must choose one of the specializations listed above and select core courses in consultation with the Graduate Adviser.

Prospectus: Within six months after choosing a research adviser, each student, in consultation with his or her research adviser, will establish a Thesis or Comprehensive Exam Committee of four faculty members (*see Graduate Thesis Policies and Procedures* in the Appendix). A hard copy of the prospectus must be provided to each committee member no later than one week before a scheduled oral defense (or later with the consent of the entire committee). At the oral defense, the student will present the prospectus to the Thesis or Comprehensive Exam Committee. If the Committee approves, the Request for Review of Research Prospectus Form and "Request for Thesis or Project Committee and Title" (GS-12) Form will be signed and approved by the Committee members. Guidelines for preparing the prospectus are also given in the Appendix.

The *Request for Review of Research Prospectus* (see appendix) AND *GS-12* (see appendix) forms must be submitted, along with an abstract to the Graduate Coordinator in the Department of Chemistry and Biochemistry. The Graduate Coordinator will ensure that the forms are submitted to the College of NSS. After approval of the Prospectus, the student may enroll in the Graduate Research course (CHEM 5970) and the Thesis course (CHEM 5990).

Grade Point Average (GPA) Requirement: Achievement of a minimum B (3.0) grade point average in all courses on the approved degree program. A grade of C is allowed on the program; however, any grade below C, including C-, requires that the course be repeated with both grades computed in the grade point average. Following is a breakdown of the grading system:

Traditional Grading System:

A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0

Any grade lower than a C is a failing grade and must be repeated.

Non-Traditional Grading System:

CR/NC: Credit/No Credit (Grade received for Comprehensive Exam CHEM 5960).
RP: Report in Progress (Grade received for CHEM 5970, 5980, 5990 until the student passes the thesis defense. After the student passes, RP is changed to CR for CHEM 5970 and 599; the RP is changed to a letter grade for CHEM 5980).

Graduate Writing Assessment Requirement (GWAR)

Graduate students are considered to have met the GWAR requirement upon admission to the University if they:

(1) earned a bachelor's degree or higher from an accredited college or university where English is the primary medium of instruction; OR
(2) attained a score of 41 or better on the writing portion of the California Basic Educational Skills Test (CBEST) or a score of 4 on the analytic writing portion of the GRE or the GMAT.

Graduate students must satisfy this requirement before completing 12 semester units. Graduate students may take the writing proficiency exam once (UNIV 4000). Students who do not pass are required to pass the designated GWAR course (UNIV 4010). Students who do not satisfy the GWAR requirement within their first 12 units may be subject to a registration hold.

Students must satisfy this Graduate Writing Requirement in order to be Advanced to Candidacy.

Introductory Research Requirement (CHEM 5910): This is the first research course that you will take. Your research advisor will describe the requirements for CHEM 5910.

University 9000 (UNIV 9000):

Information below is all taken from the UNIV 9000 webpage:
(http://www.calstatela.edu/page/university-9000-univ-9000)

Registration in UNIV 9000 is restricted to graduate students who have been advanced to candidacy and have completed all coursework (including all allowable research units) but need additional time to complete their thesis, project or dissertation. If a student wishes to take a semester off before resuming coursework, she or he must take a Leave of Absence, not UNIV 9000. Although UNIV 9000 is a zero unit course, the $350 fee is based on one unit of credit for payment purposes; no unit credit is added to the student's program or transcript. ***This course is not eligible for financial aid.***

Please note that student who register for UNIV 9000 may be required to start paying back student loans because UNIV 9000 is a zero unit course.

Below is the registration Process for UNIV 9000.

1. *Complete the Graduate Continuous Enrollment Form provided by the College of Professional and Global Education (PaGE).*
2. *Obtain the approval of a Graduate Advisor on the Graduate Continuous Enrollment Form. Before signing the form, a Graduate Advisor will check to make sure that the student has been Advanced to Candidacy and that all of the student's coursework has been completed. A plan and timeline for completing the thesis, project, or dissertation must be established with the graduate advisor and committee chair as a condition of approval for enrollment in UNIV 9000.*
3. *Bring the completed Graduate Continuous Enrollment Form to PaGE Enrollment Services (University Student Union, Room 105) to be registered. Payment is due at the time of enrollment.*
    - o *Registration must be completed by the University Add Deadline of the session in which the student wishes to maintain continuous enrollment. Upcoming dates can be found online, or contact PaGE for enrollment deadlines.*
    - o *Enrollment during Winter or Summer Session is only required if the student wishes to graduate during that term.*

Students who elect comprehensive examination options are not permitted to enroll in UNIV 9000.

Culminating Experience Requirement: A thesis or a comprehensive examination is required of all students.

Requirements for Enrollment in Graduate Research and Thesis Units (CHEM 5970, 5990): The student has an approved master's degree program in the College Graduate Dean's Office, fulfilled the WPE/GWAR (UNIV 4000) requirement, has Advanced to Candidacy (G3) classification, has an approved Request for Thesis or Project Committee

and Title (GS-12 form) with the abstract of the prospectus on file in the NSS Graduate Dean's Office. See the appendix for departmental policies and procedures for the master's thesis.

Requirements for Enrollment in Comprehensive Examination (CHEM 5960): the student has an approved master's degree program in the NSS Graduate Dean's Office, fulfilled the WPE/GWAR (UNIV 400) requirement, has an approved Request for Thesis or Project Committee and Title (GS-12 form) with the abstract of the prospectus on file in the NSS Graduate Dean's Office, has Advanced to Candidacy (G3) classification, has an overall GPA of 3.0 or higher on all coursework completed in master's degree program, and has no more than one course remaining to be completed on master's degree program. See the appendix for departmental policy and procedures for the comprehensive examination.

Classification Levels:

G1: Conditional Graduate Standing. A student who has been admitted to a master's degree program but does not have an official, approved Graduate Program for the degree on file in the Associate Dean's Office.

G2: Classified Graduate Standing. A degree-seeking master's student who has an official, approved Graduate Program for the degree but has not been Advanced to Candidacy.

G3: A degree-seeking master's student who has been Advanced to Candidacy (see below).

G4: A postbaccalaureate student who is eligible to enroll in non-restricted classes but has not been officially admitted to a degree program.

Advancement to Candidacy to Undertake Culminating Experience: Advancement to candidacy is granted by the college graduate dean upon completion of the requirements listed below and upon the recommendation of the department. It is the University prerequisite to enrolling for the graduate research (CHEM 5970) thesis (CHEM 5990) and comprehensive examination (CHEM 5960) units. Advancement to candidacy requires:

- Satisfaction of Graduate Writing Assessment Requirement (GWAR).
- Previous classified graduate standing (G2).
- An approved master's degree Graduate Program on file in the college graduate studies office.
- Completion of a minimum of 12 semester units of the master's degree Graduate Program with an overall B (3.0) grade point average or higher.
- Recommendation of the department.
- Approval of the college graduate dean.

Only students who are Advanced to Candidacy (G3) are eligible to enroll for graduate research (CHEM 5970), thesis (CHEM 5990) and comprehensive examination (CHEM 5960) units.

CHEM 5110 and CHEM 5220 – Graduate Seminar: There are two courses that culminate in the student making a department presentation on a topic outside of their research area. Students should register for CHEM 5110 (preparation for the talk) in their second semester and for CHEM 5120 (giving the talk) in their third semester. In both these courses, students attend the department seminar series. *Although students only register for the Graduate Seminar courses for two semesters, they are expected to attend all of the departmental seminars every semester whether they are registered or not registered for these courses.* Contact Dr. Frank Gomez (phone: 323-343-2368); e-mail: fgomez2@calstatela.edu) to schedule your seminar. Dr. Gomez needs to be notified a semester in advance of your scheduled presentation. See the appendix for the grading criteria for Graduate Seminar.

Completion of Program: Completion of a master's degree requires:

(1) Completion of the final approved program with an overall B (3.0) grade point average or higher.

(2) Filing of a thesis approved by the candidate's thesis committee and cleared by the University Library or passing a comprehensive examination within two attempts.

College/University Policies and Procedures

Residence Requirement: At least 21 semester units for the master's degree must be completed in residence at Cal State L.A.

Course Substitutions: It may be necessary to change an Academic Graduate Program based upon special circumstances. The substitution of a course on your Graduate Program is done with the approval of the Graduate Advisor and the associate dean. This transaction is done by the Graduate Advisor using the Advisor Request System (GS-5 GRAD Course Substitution) on GET.

A course may NOT be added to or deleted from a master's degree Graduate Program AFTER it has been taken. Any change in the Graduate Program must be approved in advance by the Graduate Advisor, department chair, and college graduate dean. When such a change has been approved, it becomes part of the Graduate Program.

Transfer Courses. Students may transfer up to nine units of previously completed coursework toward the master's degree, with Graduate Advisor approval. These may include continuing education courses, transfer courses, courses completed before the filing date for the program, or a combination thereof. Transfer courses must be equivalent to 4000- or 5000-level course work at Cal State L.A. and must be acceptable for graduate credit in an advanced degree program at the institution where they were taken. The student will need to provide the graduate advisor with a course description of the course(s) he/she wants to transfer to Cal State LA. The student should also submit unofficial transcripts to the advisor. The courses must **not** have been used as part of their undergraduate degree requirements, the cumulative undergraduate GPA must be 2.75 or greater. Once the advisor determines the course(s) is transferrable, the procedure depends on where the courses were takan. If they were taken elsewhere, the grad advisor uses the Advisor

Request System (Request Type called **GS-1A GRAD Transfer Eval)** on GET to enter the request for transfer. If these courses were taken at CSULA, the form "Request for Graduate Credit for Undergraduate Work" must be filled out and submitted. (http://www.calstatela.edu/graduatestudies/forms-and-petitions)

Full-Time Unit Load for Graduate Students: For full-time enrollment certification by the University graduate students must carry a unit load of 8 units of approved prerequisite, corequisite, or graduate program courses. Upon recommendation of a student's major department/division/school and approval by the appropriate college dean, a student enrolled in any of the following department/division/school courses may be certified as full-time with fewer than 8 units: 5960, 5970, 5990. The maximum unit load for students working towards a graduate degree is 16 units per semester. Authorization to enroll in more than 16 units requires a petition approved by the student's major department/division chair or school director and the appropriate college dean

Time Limitation (Seven-Year Rule): No subject, unit, or grade credit will be granted for any course completed more than seven years before the date of completion of the master's degree. In extraordinary circumstances, students may petition for, and the college may grant, permission to validate such an expired course by an examination given by, and with the concurrence of, the department/division/school that offers the course. An expired course taken at another institution may not be validated by examination. See the NSS Graduate Handbook for the procedures used to validate an expired course. Students are allowed to validate three courses (9 semester units or 12 quarter units).

Continuing Student Status and Leave of Absences:
Students maintain their continuing student status for registration purposes only by attending at least one of the two semesters immediately preceding the semester in which they plan to enroll (excluding the summer term). Students who were admitted and enrolled in one of the last two semesters preceding the semester in which they plan to enroll will also maintain their continuing student status for registration purposes. Absence for more than one of any two consecutive semesters without an approved leave of absence will cancel continuing registration eligibility. Please see the Leaves of Absence form for additional instructions and information.

Please note: there are additional criteria for students who are Advanced to Candidacy (see below).

Procedure for continuing student status:

Conditionally classified and classified students must be enrolled in one of the two semesters during an academic year. For example, if a student registers for Fall 2017 he/she can take off Spring 2018, and still be eligible to enroll for Fall 2018. However, if that student know that he/she cannot register for Fall 2018, he/she will need to complete a leave of absence form and give it to ADM 409 before the deadline. Petitions must be filed at Administration 409 after action by the department/division/school chair or director (also the college graduate dean in the case of graduate students) no later than 5 weeks before the end of the semester before the proposed leave.

Advanced to Candidacy students MUST be enrolled every semester from the time they are advanced to candidacy until they complete their degree. Please note that students cannot register for UNIV 9000 until after they register for all of their 5990 and 5970 units. If the student decides not to enroll in a semester, that student needs to complete a leave of absence before the deadline. Request forms are available at: http://www.calstatela.edu/graduatestudies/forms-and-petitions.

Maintaining Enrollment for Thesis: Students must be advanced to candidacy and must obtain the approval of the associate dean with the assistance of the Graduate Advisor before registering for graduate research and thesis units. When all units for CHEM 5970 and 5990 classes have been completed, a student must maintain continuous enrollment by registering for thesis or research units using the CHEM 9000 course number each semester until completion of the thesis/project. ***Furthermore, students must be officially enrolled during the term they expect to graduate.***

Thesis Requirements: Students who choose to write a thesis as their master's degree culminating experience should consult the "Guide to Preparation of Master's Theses and Project Reports," available at http://www.calstatela.edu/graduatethesis. It provides information about the following: procedures, regulations, and responsibilities governing the master's thesis or project; general requirements for thesis preparation and acceptance; format requirements for the thesis; and special instructions for projects and project reports. In addition, students must obtain specific department/division requirements from their Graduate Advisor. See the appendix for departmental policies and procedures for the master's thesis.

Graduate students who complete graduate research units (5970) and thesis units (5990) required for master's degrees must be regularly enrolled during any semester in which they use University facilities or consult with faculty. ***This means you must be enrolled during the term in which you hold your thesis defense, file your thesis with the University Library, and graduate.***

Students who have previously enrolled in all allowable research units (5970) and are not enrolled in any other credit-bearing courses or thesis units (5990) but who will use University facilities or consult with faculty must register for CHEM 9000.

Applying for Graduation: Information below is from http://www.calstatela.edu/graduation
The **Graduation Application** is used by the student to notify the university that they are ready to complete their degree program. All coursework for the degree program must be completed prior to the award date (end of graduation term). The student's record may not be altered following the awarding of the degree so it is critical that the **Graduation Application** be accurate at the time of filing. A **Graduation Application** is filed once for a degree program. The student pays a $20 application and $10 diploma fee ($30 total) at the time of filing. Once the **Graduation Application** is filed it may be updated (e.g. change term, major, option, etc.) by using the **Request to Change Graduation Term** form and paying a $25 late filing fee.

Procedure for applying to graduate:

You can find the graduation application and deadlies at **http://www.calstatela.edu/graduation**

The graduate student needs to complete the graduation application and have the graduate advisor sign the form. The graduate advisor needs to login to GET and review the student's CAAR to check the following:

o Is the student listed in the correct option?
o Is the student's catalog date correct?
o Is the student advanced to candidacy?
o Have all the course substitutions been entered on CAAR?
o Has the student completed all or almost all of his/her coursework for their program?
o Will the courses the student is planning to enroll in for his/her last semester here fulfill any missing requirements that are listed on CAAR?
o Is the student's program GPA a 3.0 or above?
o Are the program units that the student has completed listed correctly on GET? It is always good to hand count the units the student has completed for his/her program and compare those units with CAAR.

A copy of the graduation form must be submitted to the department office for the student's file. After the application form has been signed by the graduate advisor and a copy given to the department, the form needs to be taken to the Cashiers Office by the student.

Financing Your Education

Departmental Graduate Assistants, Teaching Assistants, and Research Assistants: The Department of Chemistry and Biochemistry has some funding opportunities available and we encourage you to explore the following options:

- MORE Programs – (323) 343-2395
- PREM Program – (323) 343-5584
- Cancer Collaborative Scholarship – (323) 343-2494
- Graduate Assistants/Teaching Assistants – (323) 343-2300
- Research Assistants – Many faculty have research grants that allow them to pay graduate students for laboratory research.

International Graduate Student Tuition Waiver Program: A limited number of non-resident tuition fee waivers or tuition fee reductions may be granted to non-resident graduate students who are either domestic non-resident students or citizens of a foreign country.

Federal / State Financial Aid Programs: Graduate students may apply for financial aid but they must realize that many of the grant programs (Pell Grant, Cal Grant, etc.) that might have been available as an undergraduate are no longer available to graduate students.

The financial aid application, called the FAFSA or CADA (California Dream Application for AB540 students), becomes available every October 1st for the next academic year. In the Spring,

shortly after the March 2nd priority deadline you will receive a letter from the Center for Student Financial Aid indicating your eligibility. If you are selected for verification (which means additional documentation will be required to determine your award eligibility), you will receive an actual award approximately four to six weeks after your financial aid is complete. Graduate students who are funded as full-time students must complete a minimum of 8 units per semester. For more details on course requirements and financial aid eligibility, please visit: http://www.calstatela.edu/financialaid

1. *State University Grant:* This is "gift" money: funds that you do not have to repay.

2. *Federal Work-Study (FWS):* The FWS Program enables you to become employed in an on-campus student assistant position. Eligible students may work a maximum of 20 hours per week.

3. *Unsubsidized Federal Direct Loan:* The Federal Direct Loan is an educational loan provided by the federal government. Eligible graduate students may borrow up to $20,500 per year, for a cumulative total of $138,500 in GSL/Stafford/Federal Direct Loan funds. This total includes loan money borrowed as an undergraduate. The interest rate is variable. Repayment begins six months after graduation or six months after dropping to less than half-time status. You may have up to 10 years to repay the loan.

Unsubsidized Federal Direct Loan interest begins to accrue immediately after the loan is disbursed. For more information about the interest rates and loan details, please visit: https://studentloans.gov/myDirectLoan/index.action

APPENDICES

Graduate Advisement Academic Program Plan

GRADUATE ADVISEMENT
ACADEMIC PROGRAM PLAN

Name_____ S.I.D#_____

Address:_____

City _____ State _____ Zip_____

Home Phone: _____ Alternate Phone:_____

Email1: _____ Email2: _____

Date of Entry to Program_____ Graduation Date:_____

Objective:_____

Placement Exam Dates _____ Pass or prereq. courses to take: P-Chem_____
_____ O-Chem_____
_____ Biochem_____
Biology_____
Inorganic_____
Analytical _____

Writing Proficiency Exam (WPE)Date (s) Taken:_____ Date Requirement Completed:_____

Required Units:_____ Comments:_____
Electives Units:_____
Research and Thesis Units: _____Chem 500 level units:_____
Total Graduate Program Units:_____

Year	Fall	Units	Year	Winter	Units	Year	Spring	Units	Year	Summer	Units
	Total Units			Total Units			Total Units			Total Units	
Year	Fall	Units	Year	Winter	Units	Year	Spring	Units	Year	Summer	Units
	Total Units			Total Units			Total Units			Total Units	
Year	Fall	Units	Year	Winter	Units	Year	Spring	Units	Year	Summer	Units
	Total Units			Total Units			Total Units			Total Units	

Research Director Signature _____ Date:_____

Graduate Advisor Signature:_____ Date:_____

Personalized Program for Master of Science Degree in Chemistry

GRADUATE ADVISEMENT
ACADEMIC PROGRAM PLAN

Name _____ S.I.D# _____

Address: _____

City _____ State CA Zip _____

Home Phone: _____ Alternate Phone: _____

Email1: _____ Email2: _____

Date of Entry to Program 8/1/18 Graduation Date: 5/31/20

Objective: M.S. Chemistry (Biochemistry Option) Biochemistry specialization

Placement Exam Dates 8/13/18-8/14/18 _____ _____ Pass or prereq. courses to take: P-Chem take 4410
O-Chem _____
Biochem take 4300
Biology _____
Inorganic _____
Analytical _____

Writing Proficiency Exam (WPE) Date (s) Taken: exempt Date Requirement Completed: _____

Required Units: 5 (R) Comments: Must take CHEM 4410 and 4300
Electives Units: 9/6(C/E)
Research and Thesis Units: 10 (T) Chem 500 level units: 27
Total Graduate Program Units: 30

Year	Fall	Units	Year	Winter	Units	Year	Spring	Units	Year	Summer	Units
18	5100	3R	17	xxxx		19	5110	1R			
18	5910	1T	17	xxxx		19	5910	1T			
18	4300	3	17	xxxx		19	5320	3E			
18			17			19	4410	4			
18			17			19					
	Total Units	7		Total Units			Total Units	9		Total Units	
Year	Fall	Units	Year	Winter	Units	Year	Spring	Units	Year	Summer	Units
19	5120	1R	xxx	xxxx		20	5990	3T			
19	5330	3C	xxx	xxxx		20	5970	3T			
19	5970	2T	xxx	xxxx		20	4860	3C			
19	5400	3E	xxx	xxxx		20	5340	3C			
19			xxx			20					
	Total Units	9		Total Units			Total Units	12		Total Units	
Year	Fall	Units	Year	Winter	Units	Year	Spring	Units	Year	Summer	Units
	Total Units			Total Units			Total Units			Total Units	

Research Director Signature _____ Date: _____

Graduate Advisor Signature: _____ Date: _____

Chemistry 5910 Registration Form

CHEMISTRY 5910 REGISTRATION FORM

Date:____

Student's Name:_____ SID:_____

Address:_____City_____Zip_____

Home Phone:_____ Work Phone:_____

Semester Admitted: _____

Undergraduate Degree:_____Year_____University_____

Major:_____

RESEARCH INTEREST:_____

CAREER GOAL:_____

CURRENT EMPLOYMENT:_____hr/wk_____

FACULTY MEMBERS INTERVIEWED (you must meet with at least three faculty):

Name	Initials after Interview	Date
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please return the completed form to the Graduate Advisor before you join a research group.

For Graduate Advisor use only.

RESULTS OF PLACEMENT EXAMS (NT = Not Taken; P = Pass; RT = ReTake):

Analytical_____ Organic_____

Biochemistry_____ Inorganic_____

Biology_____ Physical_____

RESEARCH DIRECTOR:_____ **DATE:**_____

CALIFORNIA STATE UNIVERSITY, LOS ANGELES OFFICE OF GRADUATE STUDIES

REQUEST FOR THESIS OR PROJECT COMMITTEE AND TITLE

GS-12

Last Name | First and Middle Names | CIN #

Email Address | Phone Number

Master's degree major and option

Projected Thesis Completion Term: ☐ Fall ☐ Spring ☐ Summer Year: _____

Title or topic area for the proposed thesis or project:

The following people have agreed to serve as the Thesis/Project Committee for the above named student:

Committee Chair name and degree | Signature and date

Member name and degree | Signature and date

Member name and degree (as required) | Signature and date

Member name and degree (as required) | Signature and date

BELOW LINE FOR OFFICIAL USE ONLY

Department Chair's signature | Date

Committee membership is certified by:

College Associate Dean's signature | Date

Rev. 8/16

M.S. Degree Thesis Committee and Graduate Research Prospectus
Department of Chemistry and Biochemistry
California State University, Los Angeles

Approval of Research Prospectus

Title of Research Project: _____

_____

_____

Student's Name: _____

Student's Signature: _____

Thesis Committee

Thesis Committee Chair: _____ **Signature:** _____

Committee Member: _____ **Signature:** _____

Committee Member: _____ **Signature:** _____

Committee Member: _____ **Signature:** _____

Status of Student's Research Prospectus

Approved: _____ **Date:** _____

Conditionally Approved: _____ **Date:** _____

Not Approved: _____ **Date:** _____

Grading Sheet for Graduate Seminar (CHEM 5120)

Please evaluate the talk by placing checkmarks in the spaces below and grade the speaker in each of the following categories using the standard A-F scale. The student will receive a copy of this form. Please make written comments wherever appropriate.

CATEGORIES	CHECK AS APPROPRIATE		PERCENT	LETTER GRADE
ORGANIZATION/PREPARATION			**15**	_____
	Good	*Needs improvement*		
• Talk as a whole is well organized	_____	_____		
• Slides/overheads are well designed to convey the information	_____	_____		
• An appropriate number of slides/overheads are used	_____	_____		
• Quality of Abstract	_____	_____		
KNOWLEDGE OF SUBJECT MATTER			**30**	_____
	Good	*Needs improvement*		
• Presentation shows real understanding of the data and their significance	_____	_____		
• Handling of questions	_____	_____		
TOPIC SELECTION AND TREATMENT			**25**†	_____
	Good	*Needs improvement*		
• Focus on primary literature (not review articles)	_____	_____		
• Critical analysis of original data is emphasized	_____	_____		
• Focus on research within the last 5 years	_____	_____		
• Work is appropriately cited (orally and written) during the seminar	_____	_____		
• Talk emphasizes results and analysis over introduction	_____	_____		
• Topic was not the subject of term paper or presentation by the student in another class, nor a research focus of the student's PI †	_____	_____		
DELIVERY			**15**	_____
	Good	*Needs improvement*		
• English is understandable	_____	_____		
• Appropriate speed and volume of delivery	_____	_____		
• Good voice range—not delivered in a monotone	_____	_____		
• Minimal use of jargon	_____	_____		
• Figures and tables clearly explained	_____	_____		
• Presentation not read from notes	_____	_____		
• Good eye contact with audience	_____	_____		
• Effective and judicious use of pointer	_____	_____		
APPROPRIATE USE OF TIME			**15**‡	_____
	Good	*Needs improvement*		
• Ideally 45 min of presentation (excluding questions), plus 5–10 min for questions. Too long or short lowers grade. ‡	_____	_____		

† Presentation of topic used in prior course, or from the student's research lab, automatically receives an overall grade of C or lower.

‡ Presentation less than 35 minutes automatically receives an overall grade of **C** or lower.

M.S. Degree Thesis Committee and Prospectus Guidelines
Department of Chemistry and Biochemistry

Within the first semester, each student, in consultation with his or her research advisor, shall establish a Thesis Committee. The student will subsequently (usually during the second semester) present to their Thesis Committee a prospectus for their thesis research program. The Thesis Committee will meet with the student at least every six months thereafter. The Thesis Committee, in cooperation with the student's research advisor and the Department Graduate Advisor, will monitor the progress of the student until the completion of the degree program.

The approved prospectus and the College GS-12 Form listing the names of the members of the Thesis Committee must be submitted to the Department Office. The Department Chair will only approve the College GS-12 Form when an approved prospectus has been submitted.

Guidelines for Preparation of the Prospectus

All text is to be typed single-spaced in 12-point type (or larger).
Margins should be one inch on all sides.
All pages must be numbered at the bottom center of each page.

I. Title

A. Conveys the specific nature of the proposed study.
B. Formatted such that:
    1. Only the first word and proper nouns are capitalized, or
    2. All words except for articles, prepositions, and conjunctions are capitalized.

II. Abstract – *maximum 500 words.*

The abstract briefly conveys what the study is about in a form comprehensible to a general audience. Acronyms, abbreviations, and technical jargon specific to the field should be avoided. The abstract should include a hypothesis or objective of the study, an overview of methods, and a brief statement of expected results and their significance.

III. Objectives – *maximum one-half page.*

A. Includes specific hypothesis (or hypotheses) to be tested, expressed as a statement.
B. If work will not test a hypothesis, this section should clearly state the objective(s) to be met.

IV. Background – *maximum two pages.*

A. Introduces topic to a reader outside of the field.
B. Should include literature review and summary of information relevant to the proposed research.
    1. Literature review should *synthesize* information, not state a disconnected list of facts.
    2. Relevant unpublished data can be included.
    3. All published and unpublished work discussed must be properly referenced.
C. Should restate Objectives section and explain how objectives relate to earlier work covered in the literature review.

V. Materials and Methods – *maximum one page.*

An overview of the experimental design, including a summary of any experiments to be conducted, is presented. This section should discuss the experimental system or conceptual approach of the study.

VI. Significance – *maximum one-half page.*

How will the proposed work contribute to the advancement of scientific knowledge?

VII. References – *maximum one page, with a minimum of 12 peer-reviewed papers from scientific journals.*

A. All references mentioned in text should be listed here.
B. All chemistry prospecti must follow the ACS Reference Format. A brief online guide on the proper format is at http://pubs.acs.org/books/references.shtml. Prospecti in biochemistry may follow either the ACS Format or the Journal of Biological Chemistry.
C. References should be numerical order, according to order mentioned in text, and referenced in the text by number.

VIII. Figures and Tables – optional.

A small number of relevant Figures and/or Tables are acceptable. All Figures and Tables must include titles and concise, explanatory legends.

Evaluation of the Prospectus:

The prospectus will be evaluated at two different levels: (1) by the Research Advisor and (2) by the Thesis Committee. The Research Advisor will work with the student until the prospectus is in its final form, ensuring that the scientific reasoning is correct, the prospectus is organized, and the writing is clear. The members of the Thesis Committee will then carry out an in-depth evaluation that includes content, format, organization, style, clarity of writing, depth of student knowledge, and writing skills (grammar, spelling, etc.). The Thesis Committee will also evaluate whether the project proposed in the prospectus is reasonable for a Master's degree student. At the end of this two-part evaluation, it should be concluded whether or not the student being evaluated can successfully complete the proposed research project in approximately two years.

Following review by the Thesis Committee, the prospectus will be approved, conditionally approved, or not approved. If conditionally approved, or not approved, it will be returned to the student with suggestions for improvement, after which the student will resubmit it to the Thesis Committee within one month.

Graduate Thesis Policies and Procedures
Department of Chemistry and Biochemistry

Title V Requirements: A thesis or project that is submitted in partial fulfillment of the requirements for a graduate program at California State University, Los Angeles, must satisfy the following definitions excerpted from Section 40510, Title V, of the California Code of Regulations (prior to January 1, 1988, referred to as the California Administrative Code). This code defines a graduate thesis as follows:

"A thesis is the written product of the systematic study of a significant problem. It identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. The finished product evidences originality, critical and independent thinking, appropriate organization and format, and thorough documentation. Normally, an oral defense of the thesis will be required."

Thesis Committee: The thesis is ultimately approved (or rejected) by a thesis committee. The MS Thesis Committee is composed of four tenured/tenure-track faculty members: Thesis Committee Chair (also known as the thesis research advisor or the student's PI), two department faculty members, and one additional faculty member from any department whose expertise must be outside the area of specialization with approval of the Thesis Committee Chair. For the purposes of this policy the areas of specialization are analytical/physical, organic/inorganic, biochemistry, and chemical education, as defined in our graduate program.

Thesis Committee Chair: The Thesis Committee Chair has the leading role in guiding the student in a thesis or project, from its inception to acceptance by the university, and assumes a special mentoring role to help the student during the preparation of the thesis. The thesis committee chair should offer constructive criticism of the various drafts of the thesis.

Selection of Thesis Committee Members: The thesis Committee Members are selected by the student, subject to approval by the student's principal research advisor. Those faculty members that agree to serve on a candidate's committee are responsible for reviewing all submissions by the candidate in a timely fashion and for offering appropriate constructive responses. They are further responsible for meeting with other committee members to perform duties and assessments as needed.

Student Responsibilities: The Student preparing the thesis is ultimately responsible for the successful completion of their theses, including submission of information and drafts in a timely fashion. Theses must evidence originality and independent thinking, appropriate form and organization, and a rationale. The student's responsibility includes not only completing the work of the thesis itself in a professionally competent manner, but also knowing and adhering to all university, college, and department requirements related to the master's thesis. It also entails adequate and regular contact, as appropriate, with individual faculty members and committees.

Plagiarism: It is common that several students in one research group work on one large project and/or that a graduate student continues on a research project originally started by another student. In all cases, any work *not* done by the author of the thesis must clearly be identified as someone else's work and properly referenced. Likewise, quotations from a prior thesis must be properly referenced. Quotation of large sections from other works (i.e. several paragraphs) is not acceptable. Likewise, work performed as an undergraduate student (at CSULA or elsewhere) may not be presented as the student's original thesis research. It may be mentioned in a background section, but must be properly referenced. Failure to do follow these rules constitutes plagiarism and will be dealt with accordingly.

Thesis and References Format: The Committee on Professional Training (CPT) of the American Chemical Society (ACS) has developed guidelines for preparations of research reports. Students may find the definitions of the various sections (Introduction, Results, Discussion, etc) helpful. While a thesis is typically longer than a research report, it contains the same sections, **namely Title, Abstract, Introduction, Experimental Details or Theoretical Analysis, Results, Discussion, Conclusions and Summary, and References**. These guidelines are available on the web at http://portal.acs.org:80/portal/fileFetch/C/CTP_005606/pdf/CTP_005606.pdf

All chemistry theses must follow the ACS Reference Format. A brief online guide on the proper format is at http://pubs.acs.org/books/references.shtml. Theses in biochemistry may follow either the ACS Format or the Journal of Biological Chemistry. Additional information on the formatting of a thesis at Cal State LA is given on the library homepage at http://www.calstatela.edu/library/guides/thesbk.htm, especially in Chapter 3. Failure to follow these regulations will lead to rejection of the thesis.

Thesis Evaluation Criteria: Master's theses are evaluated both in form and content. In accordance with the thesis definition given in Title V at the beginning of this document, a thesis that does not contain evidence of a significant amount of the student's independent original work shall be rejected. As mentioned above, a thesis must contain Title, Abstract, Introduction, Experimental Details and/or Theoretical Analysis, Results, Discussion, Conclusions and Summary, and References.

Thesis Defense: An oral defense of the thesis before the thesis committee is required by the Department of Chemistry and Biochemistry. The defense is open to the public and is publicized through distribution of a thesis abstract. A typed draft of the thesis must be provided to each committee member no later than one week before the scheduled oral defense (or later with the consent of the entire committee). The final draft of the thesis is prepared following the defense. Three copies of the approval page should be signed only after the final draft has been reviewed and approved by the committee members. Students who are submitting the final draft of the thesis must be formally registered as classified graduate students (G3) for the **semester** in which the thesis is submitted.

Upon successful completion of the oral and written components of the Thesis Defense, students must obtain signatures for the GS-13 form, and turn them into the Graduate Coordinator in the Department office.

CALIFORNIA STATE UNIVERSITY, LOS ANGELES

GS-13

APPROVAL PAGE FOR GRADUATE THESIS, PROJECT REPORT, OR DISSERTATION

SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE

AT CALIFORNIA STATE UNIVERSITY, LOS ANGELES

BY

Candidate Last Name, First and Middle Names CIN#

Department and Degree Program

TITLE:

Committee Chair Signature

Member Signature

Member Signature

Member Signature

Department Chair Signature

Date

Comprehensive Examination Policy and Procedures
Department of Chemistry and Biochemistry

Requirements for CHEM 5960: The student who elects to earn the Master of Science degree in Chemistry - Comprehensive Exam Option should enroll in CHEM 5960 the **semester** they complete all courses on their graduate program or shortly thereafter. The student must be in good academic standing, with an average GPA of 3.00 in courses on their graduate program, and **must be Advanced to Candidacy (G3 Classification)** and have no more than one course remaining for completion of the degree. This last course may be taken at the same time as CHEM 5960. CHEM 5960 is the comprehensive examination and it conforms to the following requirements of Title V, i.e., "A comprehensive examination is an assessment of the student's ability to integrate the knowledge of the area, show critical and independent thinking, and demonstrate mastery of the subject matter. The results of the examination provide evidence of independent thinking, appropriate organization, critical analysis, and accuracy of documentation." Students whose graduate program requires a comprehensive exam must declare their intent to take the exam at least one **semester** in advance, obtain department permission (i.e., permission from the faculty research advisor, the Graduate Advisor, and the student's Comprehensive Examination Committee), and register for CHEM 5960 - Comprehensive Examination (0 units). Since this course is an evaluation of the student's total career in the master's degree program at CSULA, there is no course substitution for CHEM 5960.

Oral and Written Components: For the Department of Chemistry and Biochemistry, the comprehensive exam consists of two parts, an oral presentation (30 minutes minimum) on the student's research project and a written exam (3 hour minimum). The content of the written exam will be derived from three courses from a minimum of two areas of specialization in chemistry**,** one of which must be the student's area of specialization. The term "area of specialization" refers to the area of specialization defined in the campus catalog, namely (1) analytical and physical chemistry, (2) biochemistry, (3) chemical education, and (4) inorganic and organic chemistry. The comprehensive examination shall assess the student's ability to integrate and apply the content of current issues to the areas of chemistry that are being examined.

Comprehensive Examination Committee: Both the oral presentation and written exam are graded by the Comprehensive Examination Committee, which consists of three faculty members, one of which must be the student's research advisor. The two other faculty members must be instructors of courses who will write the comprehensive exam. If the student has never taken a content course with the faculty research advisor, an additional faculty member in the student's area of specialization for the written portion of the exam will be added to the Committee membership. The chair of the Committee is the student's faculty research advisor who, in consultation with the Graduate Advisor and the Graduate Studies Committee, makes arrangements for the committee membership, time and place for the oral and written examinations, grading assignments, notification of the student and the Graduate Advisor of the outcome of the examination, and assigns CHEM 5960 a credit (CR) for a pass or a no credit (NC) for a fail.

Grading: A passing grade in the oral section and in each of the three written sections (one for each faculty member in the written portion of the examination) is a B grade or better. **If the student passes all of the sections of the exam, then the student receives a credit (CR) grade for CHEM 5960.** In the case of a fail in one or more sections, the student is assigned a no credit (NC) grade for CHEM 5960 (a RP grade is not allowed). The student may not switch to the thesis option if he/she fails the comprehensive examination. If the student enrolls in CHEM 5960, but fails to take the comprehensive exam, the grade for CHEM 5960 is no credit (NC). The student, however, is allowed to repeat the examination one time only for the failed section or sections. Two successive fails constitutes failure to complete the requirements for the Master of Science degree in Chemistry - Comprehensive Exam Option, and a second, final no credit (NC) grade for CHEM 5960 is given.

Upon successful completion of the oral and written components of the Comp Exam, students must obtain signatures for *The Report of Comprehensive Examination*, and turn it into the Graduate Coordinator in the Department office.

Submit two typed copies to
College Graduate Studies Office
Natural and Social Sciences

Check one: 1st attempt ___
2nd attempt ___
FINAL ATTEMPT ___

CALIFORNIA STATE UNIVERSITY, LOS ANGELES

SCHOOL OF NATURAL AND SOCIOL SCIENCES

GRADUATE STUDIES

REPORT OF COMPREHENSIVE EXAMINATION

Student Identification number: _____ Date _____

_____ on _____

(Candidate) (Day, Month, Year)

_____ a(n) _____

(Passed or Failed) (Written and/or Oral)

comprehensive examination in partial fulfillment of the requirements for the

MASTER OF ART/SCIENCE degree in the field of _____

Names and signatures of Members
of examination committee:

_____

_____ _____
Committee Chairperson

_____ _____
Principal Graduate Advisor

_____ _____
Department Chairperson

_____ _____
College Graduate Dean

_____