

Graduate Student Handbook
9/25/08

Department of Chemistry and Biochemistry

California State University, Los Angeles
5151 State University Drive
Los Angeles, CA 90032

Contact Information

Graduate Advisor: **Dr. Raymond E. Garcia**
Office: LKH 721
Phone: 323-343-2144
E-mail: rgarcia@exchange.calstatela.edu

Graduate Admin Asst: **Ms. Maribel G. Estrada**
Office: PS 616
Phone: 323-343-2300
E-mail: mestrad2@exchange.calstatela.edu

Graduate Studies Committee: **Dr. Krishna Foster**
 Dr. Raymond Garcia
 Dr. Alison McCurdy
 Dr. Jamil Momand
 Dr. Robert Vellanoweth

Table of Contents

Introduction	1
Chair's Greeting	1
General Information	1
Two-Year Timeline for Completion of MS in Chemistry (Thesis Option or Biochemistry Option)	2
Two-Year Timeline for Completion of MS in Chemistry (Comprehensive Exam Option)	3
Academic Policies	4
University Catalog	4
Department Requirements for Master's Degree	4
Unit Requirement	4
Course Requirements for Thesis Option	4
Course Requirements for Comprehensive Examination Option	4
Core Courses (12 Units Minimum)	5
Specialization in Analytical and Physical Chemistry	5
Specialization in Biochemistry	5
Specialization in Inorganic and Organic Chemistry	5
Specialization in Chemical Education	5
Thesis Prospectus	5
Grade Point Average (GPA) Requirement:	5
Traditional Grading System	6
Non-Traditional Grading System	6
Graduate Writing Assessment Requirement (GWAR)	6
Introductory Research Requirement (CHEM 590)	6
Culminating Experience Requirement	6
Requirements for Enrollment in Graduate Research and Thesis Units (CHEM 597, 599, and 900)	6
Requirements for Enrollment in Comprehensive Examination (CHEM 596)	6
Classification Levels	6
G1	6
G2	6
G3	6
G4	7
Advancement to Candidacy to Undertake Culminating Experience	7
CHEM 580 – Graduate Seminar	7
Completion of Program	7
College/University Policies and Procedures	7
Residence Requirement	7
Course Substitutions	7
Transfer Courses	8
Full-Time Study Load	8
Seven-Year Rule for Program Courses	8

Table of Contents (continued)

Continuing Status	8
Leave of Absence	8
Maintaining Enrollment for Thesis	8
Thesis Requirements	9
Graduate	9
Financing Your Education	9
Department Graduate Assistants, Teaching Assistants, and Research Assistants	9
International Graduate Student Tuition Waiver Program	9
Federal/State Financial Aid Programs	10
Appendices	10
Graduate Advisement Academic Program Plan	11
Program for Master of Science Degree in Chemistry	12
Grading Sheet for CHEM 580 – Graduate Seminar	13
M.S. Degree Thesis Committee and Prospectus Guidelines	14
Graduate Thesis Policies and Procedures	17
Comprehensive Examination Policy and Procedures	19

INTRODUCTION

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. Please visit us at your earliest convenience.

Scott Grover, Ph.D.
Chair

Robert Vellanoweth, Ph.D.
Associate Chair

General Information

Your first major decision will be choosing an area of specialization. Clearly, this specialization should reflect both your interests and your career goals. Your specialization will dictate which Placement Exams you must take. Your specialization will also dictate your required Core Courses. The degree program encourages breadth of study through its elective courses, so your choice of specialization does not mean you cannot pursue your interest in other areas of chemistry.

Your next step will be to plan your coursework in consultation with the Graduate Advisor, and your research advisor. The resulting departmental document is called a **Graduate Advisement Academic Program Plan** (see page 11 for an example). This plan lists courses you will take based on your Placement Exam results, your degree option, your area of specialization, and your interests,. Once the Graduate Advisor and your research advisor approve your **Academic Program Plan**, it is submitted to the Department of Chemistry Graduate administrative assistant. The assistant will reformat the **Academic Program Plan** into a personalized **Program for the Master of Science Degree in Chemistry** (see page 12 for an example). This Program is sent to the School of Natural and Social Sciences and approved by the Associate Dean. You may not change your **Program for the Master of Science Degree** unless you receive prior approval from the Graduate 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 areas may not be published or on the web, so it is important to talk to faculty in person about their 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.* Your learning/research, communication, and personality “style” may work better with some advisors than with others. You should also talk to students working in the research group.

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

Quarter:	Summer	Fall	Winter	Spring
Year 1		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Take Placement Exams. Meet with Grad Advisor to select courses</div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Pass the Writing Proficiency Examination (WPE).</div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Present Prospectus to Thesis Committee.</div>
		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Interview faculty in your area of specialization. Choose research advisor.</div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Prepare Prospectus see www.calstatela.edu/gradprograms.htm for instructions</div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Advance to Candidacy upon passing the WPE and completion of 16 units in your Grad Program</div>
Year 2		<div style="border: 1px solid black; padding: 5px; width: 80%; margin: 0 auto;">Prepare and present Chem 580 seminar</div>		
		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Begin writing thesis</div>		<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">Complete and defend Thesis.</div>

Note: Attendance at weekly department seminars is expected. During the first year the student will enroll in Chem 500, Chem 590 and other courses on the Graduate Program. During the second year the student will enroll in Chem 597 and Chem 599 and other courses on the Graduate Student Program.

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

Quarter:	Summer	Fall	Winter	Spring
Year 1		Take Placement Exams. Meet with Grad Advisor to select courses	Pass the Writing Proficiency Examination (WPE).	Present Prospectus to Comprehensive Exam Committee.
		Interview faculty in your area of specialization. Choose comprehensive exam advisor.	Prepare Prospectus see www.calstatela.edu/gradprograms.htm for instructions	Advance to Candidacy upon passing the WPE and completion of 16 units in your Grad Program
Year 2		Prepare and present Chem 580 seminar		Take Comprehensive Exam and give research presentation

Note: Attendance at weekly department seminars is expected. During the first year, the student will enroll in Chem 500, Chem 590 and other courses on the Graduate Program. During the second year, the student will enroll in Chem 597, Chem 596 and other courses on the Graduate Student Program.

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 Postbaccalaureate Study: General Information” in the current University Catalog:

[http://catalog.calstatela.edu/NXT/gateway.dll?f=templates\\$fn=default.htm\\$3.0\\$vid=calstate:current](http://catalog.calstatela.edu/NXT/gateway.dll?f=templates$fn=default.htm$3.0$vid=calstate:current)

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 or comprehensive examination option and declare a specialization in either analytical, biochemistry, chemical education, inorganic, organic, or physical. For the degree they must fulfill the following minimum requirements.

Unit Requirement: Completion of at least 45 quarter units in approved courses, of which at least half (23 units) must be graduate (500-level) courses.

Course Requirements for Thesis Option:

- (1) 4 units of basic courses (CHEM 500 – Presentation in the Chemical and Biochemical Sciences (1 unit) and CHEM 580 – Graduate Seminar (3 units)).
- (2) 12 units of core courses in the student’s field of specialization.
- (3) 14 units of elective courses, of which 8 units must be from courses not in the student’s field of specialization.
- (4) 15 units of research courses (CHEM 590 – Advanced Laboratory (4 units), CHEM 597 – Graduate Research (7 units), and CHEM 599 – Thesis (4 units)).

Course Requirements for Comprehensive Examination Option:

- (1) 4 units of basic courses (CHEM 500 – Presentation in the Chemical and Biochemical Sciences (1 unit) and CHEM 580 – Graduate Seminar (3 units)).
- (2) 12 units of core courses in the student’s field of specialization.
- (3) 18 units of elective courses, of which 8 units must be from courses not in the student’s field of specialization.
- (4) 11 units of research courses (CHEM 590 – Advanced Laboratory (4 units) and CHEM 597 – Graduate Research (7 units)).
- (5) CHEM 596 Comprehensive Exam (0 units)

Core Courses (12 Units Minimum):

Specialization in Analytical and Physical Chemistry:

- CHEM 415 – Atmospheric Chemistry (4 units)
- CHEM 462 – Instrumental Analyses (6 units)
- CHEM 501 – Quantum Chemistry (4 units)

Specialization in Biochemistry:

- CHEM 434 – Bioinformatics (4 units)
- CHEM 506 – Biochemistry of Atherosclerosis (4 units)
- CHEM 507 – Protein Structure and Function (4 units)
- CHEM 508 – Transcription Control and Gene Function (4 units)
- CHEM 509 – Signal Transduction (4 units)

Specialization in Inorganic and Organic Chemistry:

- CHEM 420 – Advanced Organic Chemistry (4 units)
- CHEM 423 – Organic Synthetic Chemistry (4 units)
- CHEM 425 – Polymer Chemistry (4 units)
- CHEM 438 – Bioinorganic and Bioorganic Chemistry (4 units)
- BIOL/CHEM 444 – Drug Discovery and Design (4 units)
- CHEM 504 – Advanced Inorganic Chemistry (4 units)

Specialization in Chemical Education:

- (1) Core courses from one of the specializations listed above (12 units).
- (2) Elective courses include (14 or 18 units, depending on whether the Thesis or Comprehensive Exam option is chosen):
 - EDIT 430 – Introduction to Computers and Their Uses in the Classroom (4 units)
 - CHEM 505 – Special Topics in Graduate Chemistry (4 units)
 - EDSP 509 – Advanced Methods and Models for Teaching Special Populations in General Education (4 units)
 - EDCI 535 – Teaching for Cross-Cultural and Global Awareness (4 units)
 - EDCI 549 – Developing English Reading/Language Arts Skills in Bilingual/Crosscultural Individuals (4 units)

Thesis Prospectus: Within two quarters of choosing a research advisor, each student, in consultation with his or her research advisor, will establish a Thesis Committee of four faculty members (see Graduate Thesis Policies and Procedures on page 17). At that time, the student will present to the Thesis Committee a written prospectus for his/her thesis research program. An oral defense of the prospectus before the thesis committee is also required by the Department of Chemistry and Biochemistry. A typed copy of the prospectus 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). Guidelines for the preparation of the prospectus are given on page 14.

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 GS-12 form when an approved prospectus has been submitted.

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

Any grade lower than a C is a failing grade.

Non-Traditional Grading System:

CR/NC: Credit/No Credit (Grade received for Comprehensive Exam CHEM 596).

RP: Report in Progress (Grade received for CHEM 597, 598, 599 until the student passes the thesis defense. After the student passes, RP is changed to CR/NC for CHEM 597 and 599; the RP is changed to a letter grade for CHEM 598).

Graduate Writing Assessment Requirement: All students must fulfill the Graduate Writing Assessment Requirement (GWR) by passing UNIV 400, the Writing Proficiency Examination (WPE), within the first three quarters of their enrollment or prior to the completion of 16 units, whichever comes later.

Introductory Research Requirement (CHEM 590): This is the first research course that you will take. Your research advisor will describe the requirements for CHEM 590.

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

Requirements for Enrollment in Graduate Research and Thesis Units (CHEM 597, 599, and 900): the student has an approved master's degree program in the College Graduate Dean's Office, fulfilled the WPE/GWAR (UNIV 400) 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 page 17 for departmental policies and procedures for the master's thesis.

Requirements for Enrollment in Comprehensive Examination (CHEM 596): the student has an approved master's degree program in the NSS Graduate Dean's Office, fulfilled the WPE/GWAR (UNIV 400) requirement, 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 page 19 for departmental policy and procedures for the comprehensive examination.

Classification Levels:

G1: 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: 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 thesis (CHEM 599) and comprehensive examination (CHEM 596) 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 16 quarter 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 597), thesis (CHEM 599) and comprehensive examination (CHEM 596) units.

CHEM 580 – Graduate Seminar: Every graduate student must register for 1 unit of CHEM 580 per quarter for three quarters. The students receive RP grades (Report in Progress) each quarter they register for CHEM 580. The RP grades are changed to letter grades when the students give their departmental seminar. *Although students only register three times for CHEM 580, they are expected to attend all of the departmental seminars every quarter whether they are registered or not registered for CHEM 580.* The department seminars are scheduled every Tuesday at 12:00-1:00 p.m. for fall, winter, and spring quarters. Contact Dr. Frank Gomez (phone: 323-343-2368); e-mail: fgomez2@calstatela.edu) to schedule your seminar. He needs to be notified 2-3 quarters in advance of your scheduled presentation. See page 13 for the grading criteria for CHEM 580.

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 32 quarter 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 with a "Course Substitution"

form (GS-5) before you have completed the course to be substituted. A copy of this form may be obtained at: <http://www.calstatela.edu/academic/aa/gsr/forms.htm#GSforms>

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 13 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 400- or 500-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. Graduate Advisors verify the validity of transfer work by submitting a "Request for Transfer Course Level Evaluation" (GS-1) to the Office of University Admissions.

Full-Time Study Load: For full-time enrollment certification by the University, graduate students must carry a study load of 12 weighted units of approved prerequisite, co-requisite, or graduate program courses per quarter. Graduate level courses (500 level courses or higher) have a weighted factor of 1.5, therefore, two 4-unit 500 level courses constitutes a full load ($8 \times 1.5 = 12$). In rare circumstances, upon Graduate Advisor and associate dean approval, students can be certified as full-time students with a study load of less than 12 weighted units when enrolled in CHEM 596, 597, 598, and 599. The maximum load for graduate students is 16 units per quarter.

Seven-Year Rule for Program Courses: 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. You cannot include courses that are more than seven years old at the time you complete all degree requirements on your Program Plan.

Students must retake or validate (pass the course by examination) any courses that will be more than seven years old at the time the degree is awarded and that have been taken at Cal State L.A. An expired course taken at another institution may not be validated by examination. Permission to validate is granted only in very exceptional circumstances; it is not given automatically and not given for more than 12 units.

Continuing Status: Students maintain their continuing student status for registration by attending at least two of any four quarters in one calendar year. Individuals who are absent three successive quarters or longer without an approved leave of absence on file must apply for readmission to the University and pay an application fee. Students reapplying to the university are subject to the catalog requirements in effect at the time of readmission.

Leave of Absence: Students can avoid losing classified standing by submitting a Leave of Absence request, approved by the associate dean and the University Registrar prior to the beginning of the effective quarter. ***Graduate students are granted a maximum of 4 quarters, subject to renewal.***

Students may petition for a leave of absence for such reasons as professional or academic opportunities, like travel or study abroad; employment related to educational goals and major fields of study or participation in field study or research projects; medical reasons, including pregnancy, major surgery, and other health-related circumstances; and financial reasons, such as the necessity to work for a specified period to resume study with adequate resources. Petitions must be filed at Administration 146 after action by the department chair and the college graduate dean no later than 3 weeks before the end of the quarter before the proposed leave. Request forms are available at:

<http://www.calstatela.edu/academic/aa/gsr/forms.htm#GSforms>.

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 597 and 599 classes have been completed, a student must maintain continuous enrollment by registering for thesis or research units using the CHEM 900 course number each quarter until completion of the thesis/project. *Furthermore, students must be officially enrolled during the quarter 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/library/guides/thesisprep.htm> . 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 page 17 for departmental policies and procedures for the master's thesis.

Graduate students who complete graduate research units (597) and thesis units (599) required for master's degrees must be regularly enrolled during any quarter 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 (597) and are not enrolled in any other credit-bearing courses or thesis units (599) but who will use University facilities or consult with faculty must register for CHEM 900.

Graduation: Application for graduation (degree check) is made on a form that is available on the Graduation Office web site at www.calstatela.edu/academic/registrar/grad_off.htm , in the department office, in college-based advisement centers, or in Administration 146 beginning five days prior to the application filing period. Candidates must be granted permission to apply for graduation by the department or college-based advisement center before they may submit the completed application and required fee to the Cashiers' Office for fee payment.

Students are required to file an application by the deadline announced in the *Schedule of Classes*. Students who are enrolled the quarter they expect to graduate but do not meet the degree requirements will have their graduation application transferred to the next quarter. Students who do not complete requirements during the next quarter must file a new application by the deadline announced in the *Schedule of Classes*.

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: The International Graduate Student Tuition Waiver provides tuition waivers for selected international graduate students, for up to 24 units per academic year. The support enables an international student to waive the nonresident portion of their fees for a maximum of 12 units for the Fall, Winter and/or Spring Quarters.

Student's applications are reviewed by a committee and are selected on the basis of their academic record, letters of recommendation and an essay, which outlines their goals and objectives and the need for financial assistance. Applications for the program are available during the Winter Quarter from the Associate Dean's Office of the College of Natural and Social Sciences.

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

The financial aid application, called the FAFSA, becomes available every January 1 for aid in the subsequent Summer Quarter or beyond. The earlier you apply, the better. Approximately four to six weeks after your financial aid file is complete you will receive a letter from the Center for Student Financial Aid indicating your eligibility or ineligibility. Graduate students who are funded as full-time students must complete a minimum of 36 units per academic year. Graduate level courses, numbered 500 and above, have a weighted unit factor of 1.5. If you are eligible for financial aid you may be offered assistance from one or more of the following programs:

1. **State University Grant:** This is "gift" money: funds that you do not have to repay.
2. **Perkins Loan:** If you accept this loan, you must understand that you will begin repaying it, with interest, six months after you graduate, leave school, or drop below halftime enrollment.
3. **Federal Work-Study (FWS):** The FWS Program enables you to become employed in an on-campus master's thesis research job. Student wages range from \$5.70 to \$12.00 an hour: eligible students may work a maximum of 20 hours per week.
4. **Subsidized Federal Direct Loan:** The Federal Direct Loan is an educational loan made by the University and is subsidized by the federal government. Eligible graduate students may borrow up to \$8,500 per year, for a cumulative total of \$65,500 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, with a minimum annual payment of \$600.
5. **Federal Unsubsidized Direct Loan:** This loan differs in two ways from the above Subsidized Federal Direct Loan: (1) you do not have to demonstrate financial need, and (2) unsubsidized Federal Direct Loan interest begins to accrue immediately after the loan is disbursed, although the repayment schedule is the same as for the Federal Direct Loan discussed above.

Financial aid questions can be answered at the Center for Student Financial Aid, Student Affairs 124. The phone number is (323) 343-1784.

APPENDICES

CALIFORNIA STATE UNIVERSITY, LOS ANGELES
 5151 State University Drive • Los Angeles, CA 90032
PROGRAM FOR THE MASTER OF SCIENCE DEGREE IN CHEMISTRY

- Check if Thesis Option
 Check if Biochemistry Option
 Check if Comprehensive Exam Option

Name _____ Permanent File # _____
 Home Phone _____ Cell Phone _____
 Email _____
 Address _____
Street City Zip Code

Undergrad Degree _____

Graduate of _____ Date _____ Major _____

Date of Admission to Conditional Standing _____

Area of Specialization: Analy Biochem Chem Ed Inorg Org P-chem

Requirements of THIS Program _____ Standard Requirements _____

1. Prerequisites to the degree program, if any, have been completed
2. Qualifying courses as listed below must be completed with a minimum GPA of 3.0

A. Basic Requirements				A. Basic Requirements (4 units)
Department, number, short title	Units	Grade	Trans. From	
CHEM 500 Presentation	1			1. 23 units in '500' courses
CHEM 580	3			

B. Core Requirements				B. Core requirements (12 units)
				12 units in area of specialization.

C. Electives				C. Electives (14 units or 18 units)
				1. For Thesis option or Biochemistry option: 14 units of which 8 units must be outside area of specialization
				2. For Comp. Exam option: : 18 units of which 8 units must be outside the area of specialization

D. Research and Thesis				D. Research and Thesis (15 units or 11 units)
				1. For Thesis or Biochem option: 15 units.
				2. For Comp. Ex. Option: 11 units
				3. Thesis committee will consist of four members including the thesis director.
				4 Comp. Exam committee will consist of three members including the committee chair.

TOTAL UNITS
(Minimum 45) _____

Qualifying Courses				Corequisite Courses
Must be completed with 3.0 GPA average				Must be completed with 3.0 GPA average

Applicant _____ Date _____ Action by Grad. Stud. Comm. _____

Advisor _____ Date _____ Classified Standing _____

Department Chair _____ Date _____ Candidacy _____

Grading Sheet for CHEM 580 – Graduate Seminar

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	_____
	<i>Good</i>	<i>Needs improvement</i>		
• 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	_____
	<i>Good</i>	<i>Needs improvement</i>		
• Presentation shows real understanding of the data and their significance	_____	_____		
• Handling of questions	_____	_____		
TOPIC SELECTION AND TREATMENT			25[†]	_____
	<i>Good</i>	<i>Needs improvement</i>		
• 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	_____
	<i>Good</i>	<i>Needs improvement</i>		
• 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[‡]	_____
	<i>Good</i>	<i>Needs improvement</i>		
• 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.

COMMENTS:

M.S. Degree Thesis Committee and Prospectus Guidelines

Department of Chemistry and Biochemistry

Within two quarters of choosing a research advisor, each student, in consultation with his or her research advisor, will establish a Thesis Committee. At that time, the student will 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 referred scientific journals.*

- A. All references mentioned in text should be listed here.
- B. All references must follow a single format.
- C. References should follow one of the following formats:
 - 1. In numerical order, according to order mentioned in text, and referenced in text by number, or
 - 2. In alphabetical order, by first author's last name.

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.

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

Request for Review of Research Prospectus

Title of Research Project: _____

Student's Name: _____

Student's Signature: _____

Thesis Committee

Research Advisor: _____ **Signature:** _____

Committee Member: _____ **Signature:** _____

Committee Member: _____ **Signature:** _____

Committee Member: _____ **Signature:** _____

Status of Student's Research Prospectus

Approved: _____ **Date:** _____

Conditionally Approved: _____ **Date:** _____

Not Approved: _____ **Date:** _____

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

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. MS Thesis Committees in the Department of Chemistry and Biochemistry shall be composed of the thesis research advisor, i.e. the Thesis Committee Chair (sometimes informally referred to as the student's PI), two other department faculty members, and one additional faculty member from any department whose area of expertise is outside the research subdiscipline (analytical/physical, organic/inorganic, biochemistry, chemical education, as defined in our graduate program) of the thesis. **For students pursuing the Option in Biochemistry, the additional faculty member must be outside the Department of Chemistry and Biochemistry.**

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 CSULA 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 quarter in which the thesis is submitted.

Comprehensive Examination Policy and Procedures

Department of Chemistry and Biochemistry

Requirements for CHEM 596: The student who elects to earn the Master of Science degree in Chemistry - Comprehensive Exam Option should enroll in CHEM 596 the quarter 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 596. CHEM 596 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 quarter 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 596 - 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 596.

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 faculty 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 596 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 596.** In the case of a fail in one or more sections, the student is assigned a no credit (NC) grade for CHEM 596 (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 596, but fails to take the comprehensive exam, the grade for CHEM 596 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 596 is given.