

DEPARTMENT OF PHYSICS AND ASTRONOMY
CALIFORNIA STATE UNIVERSITY, LONG BEACH

GRADUATE HANDBOOK

April 2008

This handbook was developed to give graduate students and faculty guidance in some of the processes associated with completing a M.S. degree in this department. This document is a supplement to the Degree Requirements listed in the current CSULB Catalog under University Requirements and Departmental Requirements (in the Physics and Astronomy section). This handout is not an official document. Always follow the current CSULB Catalog if you find any discrepancies in requirement information, and contact the Department Graduate Advisor. If you are admitted to the program before Fall 2008 semester, your requirement for graduation may be different from this document. You will need to consult with the Graduate Advisor.

All websites and all online-available forms can be found on the department website
<http://www.csulb.edu/depts/physics>

IMPORTANT WEBPAGES FOR GRADUATE STUDENTS

1. Graduate Studies at CSULB (Most comprehensive links)
<http://www.csulb.edu/divisions/aa/projects/grad/>
2. Graduate Student Handbook
<http://www.csulb.edu/divisions/aa/projects/grad/handbook/index.html>
3. Graduate and Undergraduate Catalogs (Official Webpage for all current and past catalogs)
<http://www.csulb.edu/divisions/aa/catalog/>
4. Graduate Degree Information in AY 07/08 Catalog (University-wide Graduate Degree Information and Requirements)
http://www.csulb.edu/divisions/aa/catalog/07-08/degree_info/grad_degree.html
5. Physics and Astronomy Program Information in AY 07/08 Catalog
http://www.csulb.edu/divisions/aa/catalog/07-08/depts/phys/phys_programs.html
(The Physics and Astronomy Program Information will be changed in AY 08/09 Catalog according to the Roadmap.)
6. Physics and Astronomy Department Webpage on the Student Information
<http://www.csulb.edu/depts/physics/students/program.shtml> (Currently, graduate program is linked to the #5 in the university catalog.)

7. Enrollment Services on Master's Degree Graduation Requirements
http://www.csulb.edu/depts/enrollment/graduation/masters_degree.html
8. Thesis Office (Thesis information and submission periods)
<http://www.csulb.edu/library/guide/serv/thesis.html>

PERSONNEL

VICE PROVOST FOR ACADEMIC AFFAIRS AND DEAN OF GRADUATE STUDIES - oversees all CSULB graduate programs; approves or disallows petitions to change or to grant waivers to the University and Department Graduate Degree Requirements as published in the CSULB Catalog.

ASSOCIATE DEAN FOR CURRICULUM AND INSTRUCTION - oversees all curriculum and instruction related issues in CNSM.

DEPARTMENT OF PHYSICS & ASTRONOMY CHAIR PERSON - provides input to faculty and students concerning the degree program; approves/disproves the thesis after the library has approved it; and decides and appoints Teaching Associates.

DEPARTMENT OF PHYSICS & ASTRONOMY GRADUATE ADVISOR (Prof. Chuhee Kwon, ckwon@csulb.edu) - is the chief counselor of graduate students in the Department, advises students on their graduate programs, advises students about available faculty mentors in the department, assists students toward advancement to candidacy, and signs appropriate documents relating to graduate students, provides information to potential students about the graduate program, reviews applications for admission, keeps and updates academic files of all graduate students, suggests students for Teaching Associates, and organizes the student research colloquium for each semester.

Things written in Green are the college and department requirements.

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CHECK LIST

THE FIRST YEAR

- SATISFY THE GRADUATION WRITING ASSESSMENT REQUIREMENT (GWAR)
- COMPLETE COURSE DEFICIENCIES
- 'A' or 'B' GRADES IN COURSES FOR GRADE POINT AVERAGE DEFICIENCY
- MEET AT LEAST THREE FACULTY MEMBERS.
- FIND THESIS ADVISOR.
- FILE ADVANCEMENT TO CANDIDACY.

SECOND AND THIRD YEAR

- FINISH COURSES ON THE OFFICIAL GRADUATE PROGRAM.
- MEET WITH GRADUATE ADVISOR TO CONFIRM YOU FINISHED ALL COURSE REQUIREMENTS.
- SUBMIT "REQUEST TO GRADUATE" FORM AT ENROLLMENT SERVICES

THESIS AND GRADUATION

- FINISH THE RESEARCH AND COMPLETE THE THESIS WRITING.
- REGISTER FOR A COURSE, or GS700, FOR THE TERM YOU GRADUATE.
- COMPLETE THE THESIS AUTHOR LOGIN FORM (THESIS OFFICE WEBPAGE).
- PUBLIC THESIS DEFENSE.
- APPROVAL OF THESIS BY THE THESIS COMMITTEE.
- CLEAR THESIS OFFICE.
- OBTAIN DEPARTMENT CHAIR'S SIGNATURE.
- SUBMIT THESIS TO COPY CENTER IN THE BOOKSTORE.
- CALL THESIS OFFICE WITH BOOKSTORE RECEIPT NUMBER.
- CLEARANCE LETTER WILL BE ISSUED.
- REMIND THESIS ADVISOR TO FILE "CHANGE OF GRADE FORM" FOR PHYS 698 THESIS.

THE FIRST YEAR

Listed below are the steps that need to be completed during the first year of your tenure here. If you have no identified course deficiencies in your acceptance letter, no GPA deficiency, have completed the GVAR, and met the GRE requirement when you were accepted, you may check these items off of the list.

___ SATISFY THE GRADUATION WRITING ASSESSMENT REQUIREMENT (GVAR)

___ COMPLETE COURSE DEFICIENCIES

(Recommend completion within the first year. A student cannot be Advanced to Candidacy until deficiencies are completed.)

___ 'A' or 'B' GRADES IN COURSES FOR GRADE POINT AVERAGE DEFICIENCY

___ MEET AT LEAST THREE FACULTY MEMBERS.

___ FIND THESIS ADVISOR.

___ FILE ADVANCEMENT TO CANDIDACY.

FIRST-YEAR COURSEWORK

The department has a set of core courses (mandatory) to be taken by everyone in the program as shown in the Roadmap for Physics Graduate Studies (Appendix). Students are strongly recommended to take the core courses in the proper order beginning with PHYS 510 and 560A in Fall semester. Students deficient in undergraduate preparation must take courses to remove these deficiencies at the discretion of the Department Graduate Advisor. A course taken to satisfy a deficiency will not be counted toward the degree.

GRADUATION WRITING ASSESSMENT REQUIREMENT (GVAR)

You need to demonstrate writing proficiency standard set by the University. Detailed information about the University Writing Proficiency Examination (WPE) can be found at http://www.csulb.edu/divisions/students2/testing/test_information/wpe/bulletin/.

University policy now recognizes a score of 4 or higher on the essay portions of both the GMAT and GRE as WPE equivalents at the graduate level. Students may request a "Petition for Special Exemption" form from the Office of Testing and Evaluation Services if they have completed the GMAT or GRE substitution standards successfully.

ADVANCEMENT TO CANDIDACY

Pre-requisites to file the Advancement to Candidacy are following.

1. You have completed the Writing Proficiency Examination or its alternative,
2. You have taken 6 units of graduate core courses and received "B" average or better in them.
3. You found a Thesis Advisor.
4. You should not have "Incomplete" in the transcript (College Requirement).

After satisfying the pre-requisites, you should talk to Graduate Advisor about filing the Advancement to Candidacy. The sample form is available in the Appendix.

The student who has not advanced to the candidacy before Fall 2008 must follow the new catalog based on the Roadmap courses in the Appendix. Unlike an undergraduate student whose program is governed by the catalog of the admitted year, the graduate program for an individual student is finalized when her/his advancement to the candidacy is approved.

FINDING A THESIS ADVISOR

You should talk with the professors whose research interests best match your own about the possibility of working with them on a thesis project. If you are not sure, talk to Graduate Advisor about available faculty mentors and research areas in the department. Prior to filing the Advancement to Candidacy, you are required to have chosen a thesis advisor.

Early on in your studies you may find that you wish to work with someone else, and it is possible to change the advisor during your study. It is also useful to talk to other graduate students about what each faculty are doing, and who might have an opening for a new student.

You may decide to work with a thesis advisor who is not a faculty member in the department. In this case, you will need to find a thesis chair who is a tenured/tenure track faculty member in the department.

FOUR OPTIONS FOR YOUR PHYSICS MS DEGREE

Before filing the Advancement to Candidacy, you will need to decide among the four options for the degree. The decision should be made after the consultation with Thesis Advisor and Graduate Advisor.

Students are strongly encouraged to do research and write a thesis. There are three thesis options for the advancement to the candidacy. The difference among the options is the elective course you will need to take for the graduation.

The first option is General Physics according to the roadmap, which is suited for students who are interested in theoretical research (Plan I in PHYSMS01). The second option is Computational Physics for students who are interested in computational theoretical research. The third option is Applied Physics for students who are interested in experimental research (PHYSMS02).

The fourth is a comprehensive examination option (Plan II in PHYSMS01). This option requires the permission of the Department Graduate Committee. If you decide to take the comprehensive option, you shall work principally with the Graduate Advisor. You are permitted a maximum total of two opportunities to satisfactorily complete the comprehensive examination. An unsatisfactory performance on the second attempt will result in dismissal from your graduate program.

IMPORTANT: Students are not allowed to change between the options after unsuccessful attempt of the comprehensive exam or the thesis defense.

FORMING A THESIS COMMITTEE

Once you have found a faculty member who has agreed to be your Thesis Chair, two additional members need to be selected. These members should have some interest and

expertise in your research field so that they may constructively add to your research efforts. At least two members (including the Thesis Chair) must be tenured/tenure-track faculty from the Department of Physics and Astronomy; one or more additional members may be from outside of the department.

If the Thesis Advisor is from outside of the department, it is the responsibility of the student to ensure that the other committee members remain updated on the progress.

FINANCIAL ASSISTANCE

You can get teaching and grading assistantships from the department. If you are interested, contact Graduate Advisor. There are several sources of financial aid and financial support for graduate students. Please check the following web pages for the information.

1. Financial Aid in CSU-Mentor: <https://secure.csumentor.edu/FinAid/>
2. Financial Assistant in Graduate Studies:
<http://www.csulb.edu/divisions/aa/projects/grad/assistance/index.html>
3. Financial Aid in Enrollment Services:
http://www.csulb.edu/depts/enrollment/financial_aid/loans.html

SECOND AND THIRD YEAR

___ Graduate students are encouraged to attend all departmental seminars as part of their professional training.

___ FINISH COURSES ON THE OFFICIAL GRADUATE PROGRAM.

___ MEET WITH GRADUATE ADVISOR TO CONFIRM YOU FINISHED ALL COURSE REQUIREMENTS.

___ SUBMIT "REQUEST TO GRADUATE" FORM at Enrollment Services. The filing dates are the preceding May 1 through October 15 for spring or summer graduation, and the preceding December 1 through March 1 for fall.

___ SEE THE NEXT SECTION FOR THESIS, DEFENSE, AND GRADUATION.

REQUIRED COURSEWORK FOR GRADUATION

A minimum of 30 units must appear on the program, including Colloquium (PHYS 569; 1 unit) and Thesis (PHYS 698; 6 units); but you may take other courses that are relevant or that you find interesting. The Roadmap for Physics Graduate Studies in the Appendix provides an excellent summary of required and elective courses for all four options. Up to nine units of approved extension/continuing education through CSULB or six units of approved transfer credit is acceptable on graduate student programs.

Graduate students are required to maintain a cumulative grade point average (GPA) of at least 3.00 both in their program and all other university coursework. Graduate students do not qualify for the "repeat-delete" option. Graduate students cannot repeat courses either for credit or to improve their GPA. If required by the graduate program, however, graduate students can repeat a course to demonstrate competency in a subject, and both grades will be used in the computation of the cumulative GPA.

IMPORTANT: All requirements of the degree program must be completed within seven years of the date the student program was initiated, i.e., the date (semester) when the earliest course appearing on the student program was completed.

ENROLLMENT IN PHYS 698 THESIS

Each student enrolled in PHYS 698, Thesis, must have Thesis Form (in the Appendix) on file in the Physics Department office. This document includes a description of the work to be accomplished, specific information on the tasks required, the nature of the formal report, and the basis for determining the final grade. The instructor, the student, and the Chair must sign the agreement.

You are required to give a Powerpoint presentation or similar record and a 5-10 minute public oral presentation on work accomplished in a venue and a time determined by the Department. The public oral report must be presented toward the end of the semester.

The Thesis Form **MUST BE UPDATED EVERY SEMESTER OF ENROLLMENT** with a new page containing a brief progress report, signed by the Thesis Advisor, the Chair, the Graduate

Advisor, and the student, that details what was done during the previous semester of enrollment.

When a student is registered 3 semester units of PHYS 698, it is expected that the student spends a minimum of 9 hours a week to work on his/her thesis-related research.

ENROLLMENT IN SUPERVISED INDEPENDENT STUDY COURSES (PHYS 691 Directed Study or PHYS 697 Directed Research)

Each student enrolled in a supervised study course (691, or 697, but excluding 698 Thesis) must have Supervised Independent Study Course Form on file in the Physics Department office prior to taking the course. It includes a description of the work to be accomplished, specific information on the tasks required, the nature of the formal report, and the basis for determining the final grade. The instructor, the student, and the Chair must sign the agreement.

You are required to give a Powerpoint presentation or similar record and a 5-10 minute public oral presentation on work accomplished in a venue and a time determined by the Department. The public oral report must be presented toward the end of the semester.

When a student is registered 3 semester units of supervised independent study courses, it is expected that the student spends a minimum of 9 hours a week to work on the research.

INFORMATION ABOUT ORAL PRESENTATION FOR PHYS 691, 697, and 698

As discussed earlier, each student enrolled in a supervised study course must give a Powerpoint presentation at the end of the semester in a venue and a time determined by the Department.

Students are required to provide an electronic copy of the file to the organizer (Graduate advisor or Colloquium organizer) a night before the presentation date. The presentation should be between 5 min and 8 min in addition to 2 min for Q & A. The presentation should have the following pages.

1. Title page including names (Student, Advisor, and Committee members)
1. Goal of the thesis project
2. Goal of this semester (2 min time-check)
3. What you did in this semester
4. Any results/outcomes
5. Summary of results (3 min time-check)
6. What next? (6 min time-check)

ANNUAL REVIEW OF STUDENT PROGRESS

There is no separate/independent review of student progress in the department. Hence, it is the student's and Thesis Advisor's responsibility to maintain and monitor the progress. As a chief counselor to graduate students, Graduate Advisor may provide advice and guidance during the study.

MAINTAINING CONTINUOUS ENROLLMENT

Every semester, graduate students must be enrolled in a course, or in GS700 (must have completed all courses on program), or must have an approved educational leave. Students who fail to maintain continuous enrollment must reapply to the University and to the Department of Physics and Astronomy for admission to the graduate program. Please refer to the CSULB Catalog for details.

LEAVES OF ABSENCE

In order for you to do research on your thesis, you must be registered at CSULB for each semester. If you must leave the university, you will need to file for an educational or medical leave of absence. Unapproved absences for one semester will result in the invalidation of your formal program (refer to CSULB Catalog under University Requirements).

You will need to request reinstatement into our graduate program from your Thesis Chair/Advisor and the Department's Graduate Studies Committee. You must also reapply to the University.

ACADEMIC PROBATION

Graduate students must maintain a 3.0 GPA in all courses taken while at CSULB (since the B.A./B.S.) and must have a 3.0 GPA in courses on the formal program (any course on the program with a grade lower than a "C" will not count for the M.S. Degree). Any student whose GPA falls below a 3.0 will have one semester to bring the GPA up to 3.0; failure to do so in next semester will trigger the termination of the program and disqualification. Disqualification will bar the graduate student from registering as a matriculated student at CSULB.

CHANGES IN THE THESIS OBJECTIVES OR COMMITTEE

It sometimes becomes necessary to change the thesis committee membership, including the Thesis Advisor. This normally is not a major problem; consult with the Graduate Advisor.

THE SEVEN YEAR LIMIT

If you have not finished your program by the end of the 7th year (including official and unofficial leaves of absence) since you completed the first course on your program, your program will be terminated. You will receive a warning of this very important impending deadline during your 6th year. Talk to the Graduate Advisor if you don't understand this paragraph!

THESIS AND GRADUATION

___ SUBMIT "REQUEST TO GRADUATE" FORM at Enrollment Services. The filing dates are the preceding May 1 through October 15 for spring or summer graduation, and the preceding December 1 through March 1 for fall.

___ FINISH THE RESEARCH AND COMPLETE THE THESIS WRITING.

___ REGISTER FOR A COURSE, or GS700, FOR THE TERM YOU GRADUATE.

___ COMPLETE THE THESIS AUTHOR LOGIN FORM (THESIS OFFICE WEBPAGE).

___ PUBLIC THESIS DEFENSE.

___ APPROVAL OF THESIS BY THE THESIS COMMITTEE.

___ CLEAR THESIS OFFICE.

___ OBTAIN DEPARTMENT CHAIR'S SIGNATURE.

___ SUBMIT THESIS TO COPY CENTER IN THE BOOKSTORE.

___ CALL THESIS OFFICE WITH BOOKSTORE RECEIPT NUMBER.

___ CLEARANCE LETTER WILL BE ISSUED.

A SAMPLE TIMELINE FOR THESIS DEFENSE AND GRADUATION

The following is a sample timeline for Fall or Spring graduation based on the timeline given for AY07/08. The department will start enforcing the date for the thesis to be given to the committee members. If you cannot meet the departmental thesis deadline, you may need to delay the graduation. The date in bold is the university deadlines.

Graduate Semester	Fall 07	Spring 08
Graduate Filing Date	12/1/06 – 3/1/07	5/1/07 – 10/15/07
Wrap Up Research & Start Writing Thesis	7/21/07 (Mid-July)	12/22/07 (Mid-Dec)
First Draft to thesis advisor (at least one month before the next step)	8/21/07 (Mid-Aug)	1/22/08 (Mid-Jan)
Thesis to be given to the committee members (Four weeks before the defense)	9/21/07 (Mid-Sept)	2/22/08 (Mid-Feb)
Thesis feedback received (Two weeks before the defense)	10/5/07 (Early Oct)	3/7/08 (Early March)
Thesis defense date (at least one week before the deadline)	10/19/07 (Mid-Oct)	3/21/08 (Mid-March)
Thesis Submission Period	9/14/07 - 10/26/07	2/15/08 - 3/28/08
Thesis Reports Dated	December 2007	May 2008

SUBMIT "REQUEST TO GRADUATE" FORM

There are very strict rules and guidelines to follow in order to graduate at CSULB. The first step is to file this form in the Enrollment Services.

http://www.csulb.edu/depts/enrollment/assets/pdf/grad_request_masters.pdf

COMPLETE THE THESIS AUTHOR LOGIN FORM

Effective with the Spring 2008, masters candidates who will be submitting a thesis to the Thesis Office must first complete the Thesis Author Login Form in Thesis Office Webpage <http://www.csulb.edu/library/guide/serv/thesis.html>. You will be required to provide your campus ID # and MyCSULB password. Once you have logged in, complete the form, indicating your contact and thesis information.

After you have completed the online form, you must DELIVER your thesis print copy to the Thesis Office before the submission period deadline. Failure to deliver your thesis before the deadline will result in rejection of your thesis evaluation for that term.

WRITING A THESIS

There are no universal rules for writing a thesis. It is a good idea to borrow the printed copy of a Master's Thesis in your discipline to get some insight into what is expected of a thesis. The University has a strict style and formatting guidelines for Master's Thesis everyone has to follow. The most recent "University Style and Format Guidelines for Master's Theses and Project Reports" is available in Thesis Office Webpage. I recommend you to obtain an electronic copy of someone's thesis as a template.

THESIS DEFENSE INFORMATION

Your Thesis Advisor should see a first draft approximately two months prior to the Public Defense to allow time for revisions.

1) Did you file a **Request to Graduate** with Enrollment Services for the appropriate semester/year?

Filing dates are listed in the *Schedule of Classes*. (Deadlines are established each year, and there is no flexibility with the Library deadlines.)

2) **You must be registered for a course, or GS700, during the term you graduate.**

Meet with Graduate Advisor before registration ends during your last semester (or two) here. This is so he/she can ensure you have actually completed all of your required courses!

3) Public Thesis Defense.

Schedule a date/time for your Thesis Defense with your Thesis Committee early in the semester. Inform Graduate Advisor at least one month before the date/time of your Defense, so that we can schedule room(s), post flyers (please email your current thesis title to Graduate Advisor), notify faculty/students, and prepare a sign-off form. The Thesis Committee must be in attendance.

4) Graduate students should consider the following guidelines when preparing for their thesis defense:

- All thesis committee members must be present at a thesis defense.
- All thesis committee members must receive a copy of your thesis at least three weeks before your thesis defense date.
- Thesis committee members are busy and may be unavailable on short notice. DO NOT delay planning your thesis defense until the week before the departmental thesis deadline. If a member of your committee is not available, you will be forced to delay graduation. Arrange your defense date well ahead of the departmental deadlines.
- The library thesis deadlines are absolute. You will not receive an extension on the thesis submission deadline for any reason.

5) The thesis must be given to your thesis committee at least four weeks prior to the defense.

Committee Members should read thesis and provide feedback to student within two weeks of receipt of thesis so that student has time to respond to feedback prior to the defense. The Thesis Defense will begin with a public presentation by the student followed by questions from the audience. The student and thesis committee will then hold a private in-depth discussion and defense of research findings, culminating with a decision by the thesis committee to approve or not approve the thesis.

6) Students failing to meet the criteria for thesis approval will need to meet with their committee to discuss the revisions and procedures necessary for the successful resubmission of their thesis.

7) After the approval of the thesis defense by the Thesis Committee, it is likely that corrections and final formatting for the library will need to be done. Your Thesis Advisor will need to approve changes, and in some cases changes will need to be approved by members of your thesis committee as well.

8) It is your responsibility to be certain that your thesis is formatted correctly! CHECK THE MOST RECENT *University Style and Format Guidelines for Master's Theses and Project Reports* IN THESIS OFFICE WEBPAGE.

PROCEDURE TO SUBMIT THESIS

The following is a step-by-step procedure after a successful thesis defense. You are solely responsible for this.

1. Obtain the final approval from your Thesis Advisor and/or Thesis Committee Members. If additional changes were requested at the final committee meeting make those before doing final formatting and printing.
2. Print out thesis on 20 lb. copy paper.

3. Obtain committee signatures on original thesis printed on required paper. Signatures must be in black ink, using a **medium or fine point felt, nylon tip or ball-point pen**.
4. Submit to the University Thesis Office items “a” through “g” listed below. They must be packaged together in a thesis box or boxes which can be purchased at the University Bookstore. If item “g” applies to your thesis, it must be packaged and labeled in CD, DVD, or slide boxes.

___ a. Final thesis project report signed by all committee members.

___ b. Two copies of your original abstract.

___ c. Two copies of the Candidate Information Sheet.

___ d. Department release form, if applicable.

___ e. Two copies of each copyright release form, when applicable.

___ f. One set of black and white photographs or plates and one set of color photographs or plates, if applicable. Additional sets of color photographs for each required bound copy of the thesis may be submitted when corrections are checked by the Thesis Office.

___ g. Two sets of media materials, when applicable, separate from boxed thesis or thesis project report.

5. The Thesis Office will contact you to pick up your thesis after the format has been evaluated. You will be required to make any necessary corrections before receiving format evaluation clearance and before obtaining the department chair’s signature.
6. Contact Thesis Office staff for interpretation of corrections if necessary. Note date by which corrections must be completed.
7. Make corrections and return completed thesis to the University Thesis Office. Corrections will be checked and clearance will be given to proceed to the department chair’s office for signature if all corrections are complete. Retain yellow correction list with the thesis.
8. Obtain department chair’s signature. Check with the appropriate department chair’s office to determine whether an appointment is necessary and/or what turn-around time can be anticipated.
9. Some department chairs will require that additional corrections be made before approving the thesis. Follow any instructions given by the department chair’s office.
10. Check to verify that all pages in the thesis/project report are present and in the correct order.
11. Deliver approved thesis to the University Bookstore, Campus Copy Center for duplication and payment of reproduction, binding, and microfilm fees. Personal copies may also be ordered at this time.
12. Call the University Thesis Office with your receipt number. Without this information, your clearance letter will not be issued and your Thesis requirement will remain incomplete.
13. Notify the University Thesis Office of any address change during the period between submission and receipt of original thesis and personal copy orders.

14. The University Bookstore will complete the final processing of your thesis including binding and distribution of all copies. Your original thesis, and any personal copies you ordered, will be mailed to you via United Parcel Service (UPS).
15. After the Thesis Reviewer has your receipt number, a letter of "Library clearance" will be sent to you, your Thesis Advisor, and the Graduate Services Coordinator.
16. After this letter is received, the "Change of Grade Form" for PHYS 698 Thesis will need to be submitted to change grades from "RP" to a letter grade.

The key to accomplishing these steps with minimum stress is to have the draft thesis approved by your thesis chair before the start of the semester in which you wish to graduate.

WARNINGS CONCERNING THE THESIS REVIEW DONE BY THE LIBRARY

The Library expects to review a perfect thesis in terms of format, punctuation, and grammatical usage. You must pay attention to the material from the Library Reviewer on format; your committee and you should have corrected the other items.

APPENDICIES

- I. Catalog Page for Physics MS (applied to students who were admitted until Spring 08).
- II. New Roadmap for Physics Graduate Studies
This new roadmap is for students who were admitted after Fall 08.
Students who were admitted before can choose to follow this new roadmap when he/she files advancement to candidacy.
- III. Advancement to Candidacy Form
This form needs to be filed in order to advance to candidacy.
- IV. Supervised Independent Study Course Form
Each student enrolled in a supervised study course (496, 691, or 697, but excluding 698 Thesis) must have this agreement on file in the Physics Department office prior to taking the course.
- V. Thesis Form
Each student enrolled in PHYS 698, Thesis, must have this signed document on file in the Physics Department office.
- VI. CSULB Graduate Procedure for Masters
- VII. Request to Graduate Form from Enrollment Services (Jan. 2008)

Appendix I: Catalog Page for Physics MS (applied to students who were admitted until Spring 08).

Graduate Programs

Master of Science in Physics (code PHYSMS01)

Prerequisites

1. A bachelor's degree with a major in physics; or
2. A bachelor's degree with at least 24 units of upper division physics. (Students deficient in undergraduate preparation must take courses to remove these deficiencies without credit toward the degree at the discretion of the Department Graduate Advisor.)

Requirements

Plan I

1. A minimum of 30 units of upper division and graduate courses including PHYS 540A,B, 550A,B, 560A, and 695;
2. Completion of a written thesis, 6 units of PHYS 698, and an oral presentation of the thesis research. The members of the candidate's thesis committee must approve the thesis before the student may schedule the oral presentation.

Note: Students must be advanced to candidacy before enrolling in PHYS 698. As early as possible, a graduate student should choose a thesis chair who will help in selecting the student's thesis committee consisting of at least three members (including the thesis chair and at least one other member of the Department).

Plan II

1. Permission of the Department Graduate Committee;
2. A minimum of 30 units of upper division and graduate courses including PHYS 510, 540A,B, 550A,B, 560A, and 695;
3. Passing a comprehensive examination.

The remaining required units, not more than 6 of which may be in related fields, are to be from courses selected in consultation with the Graduate Advisor.

Advancement to Candidacy

1. Students must fulfill the University requirements for advancement to candidacy.

2. A student must have a "B" average or better in six units of physics applicable toward the master's degree, of which at least three units are at the graduate level.
3. Recognizing that effective organization and verbal communication of physics are a necessary part of a successful graduate program, the Department of Physics and Astronomy normally requires that a graduate student serve at least one semester as a teaching associate or a graduate assistant as part of the M.S. program. Exceptions may be granted by the Graduate Advisor.
4. Approval of the degree program by the graduate advisor, the Department Chair, Associate Dean for Graduate Accountability in the College of Natural Sciences and Mathematics, and the Dean of Graduate Studies.

Option in Applied Physics (code PHYSMS02)

The Option in Applied Physics provides a master's degree program that emphasizes concepts and techniques particularly appropriate for applied physics. It is intended for students having a background in physics, engineering, or a related field.

Prerequisites

1. A bachelor's degree with a major in physics, or
2. A bachelor's degree with a major in engineering with upper division physics substantially equivalent to PHYS 310, 340A,B, and 450, as determined by the Department Graduate Advisor, or
3. A bachelor's degree with upper division physics and mathematics courses essentially equivalent to PHYS 310, 340B, 450; and MATH 370A,B; as determined by the Department Graduate Advisor.

Students deficient in undergraduate preparation must take courses to remove these deficiencies as determined by the Department Graduate Advisor.

Requirements

Thirty units of upper division and graduate courses as described below.

1. PHYS 540A, 550A, 560A, 569, and 695.
2. Two of the following courses or combinations of courses: PHYS 502/503, 545, 575/576, and 580.
3. Completion of a written thesis, 6 units of PHYS 698, and an oral presentation of the thesis research. The members of the candidate's thesis committee must approve the thesis before the student may schedule the oral presentation.

Note: Students must be advanced to candidacy before enrolling in PHYS 698. As early as possible, a graduate student should choose a thesis chair who will help in selecting the student's thesis committee consisting of at least three members (including the thesis chair and at least one other member of the Department).

4. Courses selected in consultation with the Department Graduate Advisor and/or thesis chair to complete the remaining 2 to 3 units.

Advancement to Candidacy

1. Students must fulfill the University requirements for advancement to candidacy.
2. A student must have a "B" average or better in six units of physics applicable toward the master's degree, of which at least three units are at the graduate level.
3. Recognizing that effective organization and verbal communication of physics are a necessary part of a successful graduate program, the Department of Physics and Astronomy normally requires that a graduate student serve at least one semester as a teaching associate or a graduate assistant as part of the M.S. program. Exceptions may be granted by the Graduate Advisor.

**California State University Long Beach
Physics Graduate Program
Two years plan - 31 Units required**

Core Courses: (25-units mandatory courses)

Semester 1			Semester 2		
Class	Course	Units	Class	Course	Units
510	Graduate Mechanics	3	545 or 546	Experimental Physics I or Experimental Physics II	3
560A	Mathematical Methods in Physics	3	540A	Electrodynamics	3
Semester 3			Semester 4		
Class	Course	Units	Class	Course	Units
550A	Quantum Mechanics I	3	522	Statistical Physics	3
698	Thesis	3	698	Thesis	3

Colloquium: (PHYS-695) must be taken during at least one of the above semester (1 unit).

Graduate Physics Options: (6 units minimum)

Applied Physics		
Semester 3 and/or 4		
580, or 575, 576	Computer interfacing in Experimental Physics, or Modern Optics, Modern Optics Lab.	3 units
One or several classes among 545/546/575/576 or 580		3 units (minimum)
Recommended Electives (minimum 3 units)		
Any 500-level (or above) physics class that is useful for the Master's thesis.		

Computational Physics		
Semester 3 and/or 4		
562	Computational Physics	3 units
550B	Quantum Mechanics II	3 units
Recommended Electives (minimum 3 units)		
Any 500-level (or above) physics class that is useful for the Master's thesis.		

General Physics		
Semester 3 and/or 4		
550B	Quantum Mechanics II	3 units
Recommended Electives (minimum 5 units)		
Any 500-level (or above) physics class that is useful for the Master's thesis.		

Department of Physics and Astronomy
Master of Science in Physics, (PHYSMS01) Plan I: Thesis

Graduate Program for Advancement to Candidacy

Student's Name: xxxxxxxxxxxx
 Address: xxxxxxxxxxxxxxxx
 xxxxxxxxxxxxxxxx

Student ID No: xxxxxxxx

GWAR Completed

GRADUATE PROGRAM

Required Courses

Course	Course Number	Course Title	300 – 400 Units	500 – 600 Units	Year/Sem Taken	Course Grade
PHYS	510	Graduate Mechanics		3	-----	-----
PHYS	560A	Mathematical Methods in Physics		3	-----	-----
PHYS	545 or 546	Experimental Physics		3	-----	-----
PHYS	540A	Electrodynamics		3	-----	-----
PHYS	550A	Quantum Mechanics I		3	-----	-----
PHYS	522	Statistical Physics		3	-----	-----
PHYS	695	Colloquium		1	-----	-----
PHYS	698	Thesis		6	-----	-----
TOTAL UNITS				25		

Electives (5 units minimum)

PHYS	550B	Quantum Mechanics II			-----	-----
PHYS						
PHYS						
PHYS						
PHYS						
PHYS						
TOTAL UNITS						

Course Deficiencies: *None*

Thesis Committee:

 Dr. xxxxxxxxxxxx, Chair

 Student's Signature

 Date

 Dr. xxxxxxxxxxxxxxxx, Member

 Department Graduate Advisor

 Date

 Dr. xxxxxxxxxxxx, Member

 Department Chair

 Date

 Associate Dean for
 Graduate Accountability

 Date

SUPERVISED INDEPENDENT STUDY COURSES
PHYS 496 Special Problems PHYS 691 Directed Study PHYS 697 Directed Research

Each student enrolled in a supervised study course (496, 691, or 697, but excluding 698 Thesis) must have this agreement on file in the Physics Department office prior to taking the course. It includes a description of the work to be accomplished, specific information on the tasks required, the nature of the formal report, and the basis for determining the final grade. The instructor, the student, and the Chair must sign the agreement.

Name _____ CSULB ID# _____

Address _____
(Street address) (City) (Zip)

Tel. No. _____ Email address: _____

Major _____ Graduate Student Undergraduate

Course No. _____ Ticket No. _____ Units _____ Year _____ Semester _____

A SUPERVISED INDEPENDENT STUDY COURSE is a significant learning experience for a student. A vital part of that learning occurs as a result of participating in the kind of public reporting that is a hallmark of scientific work, namely, public written and oral reports covering the material studied.

- WE AGREE** that the obligations of the courses include a brief written report (or powerpoint presentation or similar record) and a 5-10 minute public oral presentation on work accomplished by the student in a venue and a time determined by the Department. The public oral report must be presented toward the end of the semester. The members of the graduate/curriculum committees, along with the colloquium coordinator, will arrange the public talks, the venue, and will facilitate ordinary equipment requests related to the presentations.

The student and supervisor understand that this obligation is required by the Department of Physics and Astronomy, and agree to be present at the assigned times. Failure to meet this obligation can mean disqualification from any future supervised courses in the Department.

In the public talks, the student sets the general context and background of the work in some larger overview of the discipline and then focuses on the specific work done.

- WE AGREE on the attached description of the intended work and outcome:**

The student and instructor write this section, and need to be specific about all relevant items such as tasks to be undertaken, nature of the formal report to be made, and basis for determining grade assigned. This description is to be attached to this cover sheet.

Signature of Faculty Supervisor	Date	Signature of Student	Date
Signature of Chair of Physics and Astronomy	Date		

SUPERVISED INDEPENDENT STUDY COURSES

PHYS 496 Special Problems PHYS 691 Directed Study PHYS 697 Directed Research

Page 2

Description of intended work and outcome(s): Be specific about all relevant items such as tasks to be undertaken, nature of the final report to be made, and basis for determining the grade that will be assigned.

PHYS 698, THESIS

Each student enrolled in PHYS 698, Thesis, must have this signed document on file in the Physics Department office. This document includes a description of the work to be accomplished, specific information on the tasks required, the nature of the formal report, and the basis for determining the final grade. The instructor, the student, and the Chair must sign the agreement.

Name _____ CSULB ID# _____

Address _____
(Street address) (City) (Zip)

Tel. No. _____ Email address: _____

Thesis Advisor: _____

Thesis Committee: _____

Year _____ Semester _____ Units _____

A SUPERVISED THESIS is a significant learning experience for a student. A vital part of that learning occurs as a result of participating in the kind of public reporting that is a hallmark of scientific work, namely, public written and oral reports covering the material studied.

FORMAL ORAL REPORT REGULATIONS: An oral report on the thesis is an important part of the requirements for completing PHYS 698. The student must plan to complete her or his thesis sufficiently early in the semester so that arrangements for the oral report can be made. The following regulations apply:

- a. A 30-minute seminar giving the background, results, and significance of the Master's thesis must be presented, followed by answers to questions from the audience.
- b. A time and place will be chosen, in conjunction with the Thesis Advisor, so that the entire Thesis Committee will be able to attend.
- c. The time, place, and title of the seminar shall be publicly announced so as to encourage attendance from faculty and students in the Department, as well as others external to the Department.
- d. The grade awarded for PHYS 698 may be partially based on the seminar. Only after the University has officially accepted the thesis and after the seminar has been presented may the grade be assigned.

IF THE FORMAL ORAL THESIS REPORT, DESCRIBED ABOVE, DOES NOT TAKE PLACE in the semester in which you receive credit in PHYS 698, then the following rule applies:

You are required to give a brief written report (or powerpoint presentation or similar record) and a 5-10 minute public oral presentation on work accomplished in a venue and a time determined by the Department. The public oral report must be presented toward the end of the semester. The members of the graduate/curriculum committees, along with the colloquium coordinator, will arrange the public talks, the venue, and will facilitate ordinary equipment requests related to the presentations.

IMPORTANT: The information on this document MUST BE UPDATED EVERY SEMESTER OF ENROLLMENT with a new page containing a brief progress report, signed by the Thesis Advisor, the Chair, the Graduate Advisor, and the student, that details what was done during the previous semester of enrollment.

PHYS 698, THESIS

Page 2

Description of intended work and outcome(s): Be specific about all relevant items such as tasks to be undertaken, nature of the final report to be made, and basis for determining the grade that will be assigned.

THESIS TOPIC:

DESCRIPTION:

Signature of Faculty Supervisor Date

Signature of Student Date

Signature of Chair of Physics and Astronomy Date

Signature of Graduate Advisor Date

PHYS 698, THESIS

UPDATE OF THESIS PROJECT:

Year _____ Semester _____ Units _____

THESIS TOPIC:

DESCRIPTION (progress report, particularly describing what was accomplished the previous semester, and also describe any changes in direction of the project, or difficulties that are impeding progress):

Signature of Faculty Supervisor Date

Signature of Student Date

Signature of Chair of Physics and Astronomy Date

Signature of Graduate Advisor Date



CALIFORNIA STATE UNIVERSITY, LONG BEACH

CALIFORNIA STATE UNIVERSITY, LONG BEACH GRADUATION PROCEDURES – MASTERS/CERTIFICATES

Potential candidates for graduation seeking a degree/certificate at CSULB **MUST** observe the following:

1. MEET ALL CRITERIA REQUIRED TO FILE A REQUEST TO GRADUATE

- The Writing Proficiency Exam (WPE) **MUST** be taken by every student and the results posted in the computer. (Passing is required to be advanced to candidacy, but to file your request you need to have only taken the exam).
- Must be in good academic standing.
- Must have no outstanding financial obligations to CSULB.
- Must have an approved major on file. "Pre" major codes cannot file.
- Master's students must already have approved Advancement to Candidacy on file or in the process of being advanced to candidacy.
- Certificate students must check with the Program Director to see whether a check sheet is required.

2. FILE A REQUEST TO GRADUATE FORM

- Forms available at Student Relations (BH 101).
NOTE: Filing does not guarantee permission to become a degree candidate.

3. FILE ON TIME

- Students seeking to graduate in Spring or Summer must file between the preceding May 1st and October 15th.
- Students seeking to graduate in Fall or Winter must file between the preceding December 1st and March 1st.
- Requests to Graduate may not be filed after the deadline. In the presence of documented and compelling need, special petitions after the deadline **MAY** be allowed.
NOTE: Petitioning does not guarantee permission to become a degree candidate.

4. FEES

- Commencement Ceremony/Diploma - **\$40.00** (starting December 1, 2006)
Program Certificate (Optional – for students seeking a certificate) - **\$10.00**

5. APPROVALS – FACULTY APPROVAL IS REQUIRED FOR POTENTIAL DEGREE CANDIDATES

- Major(s) – Department approval for each.
- Master's – Your candidacy **MUST** be approved by your major department.
- Your department will notify the Evaluation Unit in the Enrollment Services office if you have been denied candidacy. If denied, the candidate is responsible for clearing that denial with the department and for ensuring that the department notifies the Evaluation Unit prior to the deadline to clear all requirements.

6. ELIGIBILITY DETERMINATION

- The "Degree Audit" process is undertaken by staff to verify your eligibility to graduate and to determine remaining requirements. It is **NOT** an advising tool. Your Advancement to Candidacy is the basis for your degree audit by the evaluator in the Evaluation Unit. Should you amend your program, you must do so through your department and the approved amendment must be on file in the Enrollment Services office. Every effort is made to complete your degree audit prior to the deadline to add/drop courses in the semester of graduation. However, delays do occur and no guarantee can be offered.
- The "Degree Clearing" process is the final review of your record by staff after all requirements have been completed since the degree audit was done. All documents such as substitutions, grade changes, incompletes, petitions, and waivers must be on file the last day of the term of intended graduation. Official transcripts must be on file by July 1st for Spring graduation, by October 1st for Summer graduation, and by February 1st for Fall graduation.

Your graduation date will be cancelled and you will not receive final review if by the last day of the term:

1. The WPE has not been passed.
2. Faculty have denied your candidacy.
3. You are not in good standing.
4. Master's candidates only – Must have library clearance on thesis; clearance on comprehensive exam; change of grade on thesis.
5. Incomplete, RD, and SP grades are unresolved.

7. FAILURE TO GRADUATE

- a. Students who do not file a Request to Graduate form, who do not meet all degree requirements, or who do not have all necessary documents on file in Enrollment Services by the deadline cannot be graduated. The expected graduation date will be “**CANCELLED**” until the student declares graduation for a future term. That declaration must occur within the published deadlines for the new term and a re-filing fee will be charged if the deadline is missed. (“Request to Change Graduation Date” forms are available at the Student Relations windows, BH 101).

8. DEGREE “HOLDS”

Students may not register for the semester following their intended graduation unless:

- a. They “cancel” their declared graduation date.
- b. They change their intended degree date (for which a fee is charged).

If continuously enrolled, Grad students may continue to enroll if an approved change of major form is submitted to the Office of Enrollment Services.

9. NOTIFICATION

- a. “Degree Clearing” begins 3 weeks after the end of the term and takes up to 3 months to complete.
- b. “Cancelled Graduation” letters are sent with 3 months.
- c. “Congratulations” mailers are sent within 3 months.
- d. “Diploma has arrived” postcards are sent within 6 months.
- e. The student is responsible for notifying Enrollment Services diploma staff of any name or address change, especially if it affects the diploma.

10. DEGREES AND TRANSCRIPTS

- a. Degrees and honors are posted to your transcript when degree clearing is complete.
- b. Transcripts are considered official and are verification of your degree. They are available at a pre-paid fee of \$4.00 per copy (less for multiple copies ordered simultaneously). Requests must be sent in writing to the CSULB Records Office.

11. COMMENCEMENT

One commencement ceremony is held per year at the end of the Spring semester. **Students may participate if they still have a few requirements outstanding.** However, your official graduation will depend on when you have actually fulfilled **ALL** requirements and have officially been cleared. **ATTENDING THE CEREMONY DOES NOT CONSTITUTE GRADUATION.** Information about the ceremony is available through your major department. Cap and gown rental or purchase is through the University Bookstore, usually beginning May 1st.



California State University, Long Beach
Office of Enrollment Services
Request to Graduate
Masters Degree/Certificate

Please print clearly. Your diploma will be printed with your name of record (name used in attendance during your enrollment at CSULB). To change your name, an official request must be submitted to Enrollment Services with the appropriate documentation.

LAST	FIRST	MIDDLE
------	-------	--------

Address (number, street, Apt. #)			Anticipated Degree Date
City	State	Zip Code	Campus ID #
Other Names used on your records:			Telephone Number

Degree Sought:

MA MS Other: _____ Certificate Title: _____

Major: _____

Option: _____

Name of Baccalaureate granting institution: _____

Baccalaureate Degree: _____

Date Awarded: _____

FOR OFFICE USE ONLY <i>Do not write in this space.</i>	
<u>Major Code</u> _____ - _____	
<u>Certificate Code</u> _____ - _____	
Date WPE Taken:	_____
Total Units Completed to Date:	_____
Date Received:	_____
Received by:	_____
Date Processed:	_____
Processed By:	_____
Fees Paid:	_____

UNIVERSITY REQUIREMENTS

1. You must be enrolled the semester or summer session in which you are advanced. Enrollment in Extended Education courses, including Graduate Studies 700, does not fulfill this requirement.
2. You must be enrolled and advanced to candidacy at least one semester prior to graduation.
3. Once you are advanced to candidacy, you must maintain continuous enrollment. Failure to meet this requirement will constitute withdrawal from the Master's program.
4. You must be enrolled in the semester or summer session in which you graduate. Students eligible to enroll in GS 700 through Extended Education are required to have an authorization slip from their department before enrolling in the course.
5. A graduation check is done based on the program that is approved by the department and school. Should you wish to amend your program, you must file a "Change of Program" form with your graduate advisor.

Student Signature: _____ Date: _____

DO NOT WRITE ON THIS SIDE

Masters Degree/Certificate Check

INCLUDES WORK THROUGH _____ including _____ units by transfer.
(Does not include work in progress.)

Date Writing Proficiency exam was passed: _____ Date of Advancement to Candidacy: _____

According to our records, you are currently enrolled in the following courses for the _____ term:

THE FOLLOWING REQUIREMENTS REMAIN FOR THE DEGREE

- Library clearance from thesis reviewer
 - Clearance on oral defense of thesis
 - Clearance on Comprehensive Examination
 - Clearance on Project
 - Clearance on the foreign language requirements
 - Clearance on 699
 - Did not maintain continuous enrollment.
Department must initiate reinstatement.
 - Was not enrolled when advanced to candidacy*
 - Was not advanced one semester prior to graduation*
- (*Please see your major advisor regarding this matter.)

Grade Point Deficiencies

Major: _____ Overall: _____

Summary of Required Units

Required	**Transfer	CSULB	Completed	Enrolled	Required to Complete
Major					
500/600					

**Transfer work may not be used towards the minimum units required for the 500/600 series.

Courses to be Completed:

Transfer Work

Sem. Qtr.

School: A: _____

B: _____

Courses: _____

Official Transcript Not on File

Transfer work includes other universities, continuing education, and extension work, including CSULB Extension courses.

Courses Over Seven Years

CSULB: _____

Transfer Courses: _____

School: _____

Dates of First Units Used on Masters Program:

Transfer: _____ CSULB: _____

All requirements of the degree program must be completed within seven years of the date the student program was initiated, i.e. the date (semester) when the first course appearing on the student program was completed.

Prepared by: _____ Date: _____ Revised Dates: _____

Degree Cleared: _____