

Wildy Grad Student Handbook

Department of Biological Sciences



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PREFACE

This handbook has been designed as a resource for current and incoming graduate students in the Department of Biological Sciences at California State University, East Bay and contains information primarily about department-level policies and procedures. We encourage biology graduate students to familiarize themselves with its contents and keep it handy for reference throughout your graduate study at CSUEB. It is important to note, however, that the handbook does not replace the University Catalog, which contains the official information concerning university-level rules and regulations. You may also contact the departmental Graduate Coordinator or the Chair of the department if you have any additional questions. Please be aware that although faculty and staff are available to assist you in meeting all academic requirements that apply to your program, you are ultimately responsible for your own educational progress.

This handbook has been prepared using a variety of established resources (i.e., the CSUEB catalog, documents from the Graduate Studies and Department of Biological Sciences offices) and with the input of faculty and students from the CSUEB Department of Biological Sciences. It is hoped that this resource will allow current and future students to make the most out of their graduate student experience in our department. We recognize that this may not be a comprehensive account of all the issues concerning graduate students in our department. Therefore, we encourage you to provide us with comments concerning the strengths and weaknesses of this handbook.

INTRODUCTION

The faculty and staff of the Department of the Biological Sciences welcome you to the Master's Program. We are proud to offer you a wide range of disciplines. As a CSUEB Department of Biological Sciences graduate student, you will be a vital part of a graduate student body representing students from all over the country and all over the world.

The Master of Science degree in Biological Science offers students the opportunity to obtain advanced academic and research experience in specialized areas of biological science. The essential requirement of a Master's thesis is that it is literally a demonstration of your full understanding, your mastery, of a particular subfield and that you are capable of operating at that level. Specifically, we expect that students graduating with an M.S. or M.A. in Biological Science from Cal State East Bay will be able to:

- 1) use the scientific method to examine questions about the natural world; specifically, they will be able to formulate testable biological hypotheses, analyze empirical data, and synthesize the results of the analysis;
- 2) present the design and results of an observational or experimental analysis in a well-organized manner using the scientific paper format;
- 3) orally communicate the design and results of an observational or experimental study in an effective manner;
- 4) evaluate primary scientific literature and judge the value of the information presented in relation to particular biological questions.

This handbook is organized into two main sections: *Section I: The Admission Process* and *Section II: Navigation of the Department of Biological Sciences Master's Program*.

* The original version (September 2008) version of this graduate handbook was compiled and edited by Erica L. Wildy.

PART I: THE ADMISSION PROCESS

UNIVERSITY ADMISSION REQUIREMENTS

All graduate and post-baccalaureate applicants (e.g., joint Ph.D. and Ed.D. applicants, master's degree applicants, those seeking educational credentials, and holders of baccalaureate degrees interested in taking courses for personal or professional growth) must file a complete graduate application as described in the graduate and post-baccalaureate admission materials at www.csumentor.edu. Applicants who completed undergraduate degree requirements and graduated the preceding term are also required to: a) complete and submit an application and b) the nonrefundable application fee.

NOTE: Applicants seeking a second bachelor's degree should submit an undergraduate application for admission, rather than a graduate application.)

Since applicants for post-baccalaureate programs may be limited to the choice of a single campus on each application, re-routing to alternate campuses or later changes of campus choice are guaranteed. To be assured of initial consideration by more than one campus, it is necessary to submit separate applications (including fees) to each.

Applications submitted by way of [csumentor](http://www.csumentor.edu) are preferable. An electronic version of the CSU graduate application is available on the internet at <http://www.csumentor.edu>. If you cannot apply online, you may pick up a paper application in the Student Information Lobby of Warren Hall, the Academic Programs and Graduate Studies Office (WA 859), or from the Graduate Studies Office of any California State University campus. You can also send an e-mail request for an application to the Cal State East Bay Academic Programs and Graduate Studies Office at: gradprograms@csueastbay.edu.

Graduate applicants may apply for a degree objective, a credential or certificate objective, or may have no program objective. Depending on the objective, Cal State East Bay will consider an application for admission as follows:

General Requirements

The minimum requirements for admission to graduate and post-baccalaureate studies at Cal State East Bay are in accordance with California State University regulations as well as Title 5, chapter 1, subchapter 3 of the California Code of Regulations. Specifically, a student shall at the time of enrollment:

- 1) have completed a four-year college course of study and hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association, or have completed equivalent academic preparation as determined by appropriate campus authorities;
- 2) be in good academic standing at the last college or university you attended;
- 3) have earned a GPA of at least 2.5 ("A" = 4.0) in the last 90 quarter (60 semester) units you attempted; and
- 4) satisfactorily meet the professional, personal, scholastic, and other standards

for graduate study (including qualifying examinations) established by your department (see Biology Dept. guidelines below). You may also be required to submit letters of recommendation.

Application Filing Periods

The application filing periods for graduate and unclassified post-baccalaureate applicants are the same as for undergraduate applicants. You can find more information on this by visiting: <http://www.csueastbay.edu/ecat/current/i-080admiss.html#section4>. You should also contact Enrollment Management or check the university website for up-to-date information on application filing periods and deadlines for the term of entry you are considering.

University Fees

Legal residents of California are not charged tuition at CSU campuses, only fees. The fees and their amounts 2008-2009 are listed in a table in the University Catalog at: <http://www.csueastbay.edu/ecat/current/g-010gradst.html#section6>. For information on the nature of the fees (e.g., library fees, individual course fees, test fees, etc.) and how to pay them, you can check the *Graduate Studies* section of the online catalog at: <http://www.csueastbay.edu/ecat/current/g-010gradst.html#section6>. The *Fees and Expenses* chapter (<http://www.csueastbay.edu/ecat/current/i-100fees.html#>) also has information on the policies governing debts owed to CSUEB.

Non-residents *do* have to pay tuition in addition to other fees charged to all students. Enrollment Services determines residence status of all new and returning students for nonresident tuition purposes. For information on the criteria used in making this determination, as well as residence determination dates see the Admissions/Undergraduate chapter in the online catalog at: <http://www.csueastbay.edu/ecat/current/g-010gradst.html#section10>.

Admission to a Graduate Program

Many graduate degree programs at Cal State East Bay also require that you complete a separate departmental application. These programs may require that you meet additional admission requirements above and beyond those required for admission to the university. Contact the department offering the program to obtain a departmental application form and information on departmental application deadlines and admission requirements.

If you wish to pursue a graduate Special Major, contact the Office of Academic Programs and Graduate Studies (WA 859, 510-885-3718) as soon as possible, preferably before you submit your admission application. You cannot be admitted as a *Special Major* until your program of study has been approved.

Admission Categories

Students who meet the minimum requirements for graduate and post-baccalaureate studies may be considered for admission in one of the four following categories:

Unclassified Post-Baccalaureate

Applicants admitted as an *Unclassified Post-Baccalaureate*, may be able to take courses applicable to a graduate degree (even if not yet admitted to the degree program), up to a maximum of 13 units, or may enroll in courses for personal or professional growth. Because of accreditation restrictions and/or heavy enrollment pressure, some registration restrictions may be applied to some courses for students in this category. Please contact the graduate department for information on registration restrictions for graduate-level courses.

As an *Unclassified Post-Baccalaureate*, you are not assured of admission to any master's degree or credential program and no more than 13 quarter units earned in this status may be applied to a master's degree. In addition, because of heavy enrollment pressure, some departments may restrict registration in some courses for students in this category. For these reasons, if a master's degree is your goal, you should seek admission to your chosen program as soon as possible. Admission as an "Unclassified Post-Baccalaureate" student does not constitute admission to, or assurance of consideration for admission to, any graduate degree or credential program.

Classified Post-Baccalaureate

When you are admitted to a credential or post-baccalaureate certificate program you are placed in the *Classified Post-Baccalaureate* category. In addition to the general requirements outlined above, you are required to satisfy any additional criteria established by your department.

For information on admission to the credential programs in teacher education, administrative services, special education, and pupil personnel services, contact the College of Education and Allied Studies. For information on admission to certificate programs, contact the appropriate department.

Conditionally Classified Graduate

If you are admitted conditionally to your master's degree program for one or more of the following reasons, you are placed in the *Conditionally Classified Graduate* category:

- 1) You must complete specific courses (usually undergraduate).
- 2) Your program of study and thesis/project committee must be determined and approved.
- 3) You must pass certain qualifying examinations.
- 4) Your GPA does not quite meet expected standards, and you must demonstrate your ability to maintain a minimum 3.0 GPA.
- 5) You have not satisfied the **University Writing Skills Requirement**.

Classified Graduate

If you are admitted to the Biology Master's Degree program, you are placed in the *Classified Graduate* category. To be admitted as a *Classified Graduate* you must satisfy the general university admission requirements, all additional criteria established by your department, and the University Writing Skills requirement.

THE DEPARTMENT OF BIOLOGICAL SCIENCES GRADUATE PROGRAM

Admission to the Biology Graduate Degree Program

The M.S. and M.A. degree programs in the Department of Biological Sciences are open to graduates of accredited institutions who have a four-year baccalaureate degree in any field of the biological sciences and who have achieved a GPA of at least 2.75 in all undergraduate work and an average of 3.00 in all biological science courses taken as an upper division student. Normally, all applicants should have completed undergraduate courses equivalent to those required of all biological science majors at Cal State East Bay.

General Requirements

In addition to filing the university application and fee, students must apply to the Department of Biological Sciences for admission to graduate standing in the M.S. or M.A. degree programs. Application forms are available through the department office or by accessing the Biology Department website. In addition to the GPA requirements for admission mentioned above, the department requires that the following be sent directly to the Department of Biological Sciences. The following are required to apply to the Biology Department Graduate Program:

- departmental application (available through the department office or by accessing the Biology Department website).
- GRE General Test Scores (target scores are in the upper 30th percentile; significant deviation from target scores may be grounds for denial of admission)
- three letters of reference
- statement of purpose

Please note that applicant files will not be reviewed or processed until the application file is complete; this is the applicant's responsibility. Any student not admitted to the program because of incomplete application, deficiency, or failure to meet deadlines is urged to enroll in the university as an *Unclassified Post-baccalaureate* student pending completion and/or reconsideration of the application for classification.

Admission Categories

All students admitted to the program will be admitted as *Conditionally Classified Graduate* students. A *conditionally classified* student is accepted into the graduate program, but may only remain and advance in the graduate program if certain requirements are fulfilled within the first year (4 quarters) in the program. These requirements may include one or more of the following:

- a) take general GRE and have scores sent to the Department;
- b) have one or more letters of recommendation sent to the Department;

- c) complete course deficiencies with a grade point average of 3.0 or better in these classes;
- d) fulfill the University Writing Skills requirement;
- e) secure a thesis advisor in Biology if you are doing an M.S. as outlined below (M.A. students do not need a thesis advisor but must indicate in writing to the Biology Office by the end of the first year their intention to complete an M.A. described below).

Your acceptance letter will indicate if you have one or more of these requirements to fulfill.

Any student not admitted to the program because of incomplete applications, deficiencies, or failure to meet time deadlines is urged to enroll in the university as an *Unclassified Post-baccalaureate* student pending completion and consideration of the application for classification.

Note: Although not an admission requirement, the Writing Skills Test (WST) must be taken during the first quarter of admission to the program and must be passed to become a fully Classified Graduate student.

Those students applying for admission to the program with the intent of obtaining an M.S. degree in Marine Sciences from work done at Moss Landing Marine Laboratories (MLML) must gain admission into *Conditionally Classified Graduate* status as stated above. However, the classification procedures as stated below WILL NOT apply for these students; instead, once admitted to the program as *Conditionally Classified Graduate* students, they will follow MLML's classification procedures (see the Marine Science chapter in the graduate section of this catalog).

Prior Coursework

Applicants must have taken basic courses in biological and physical sciences and mathematics/statistics. Generally speaking, this includes a minimum of:

- a year of introductory biology
- a year of general chemistry
- a year of physics
- a quarter/semester of calculus

Any basic coursework that is missing will be treated as a course deficiency and must be completed by the time of classification (see below). No action will be taken by the department until the application file is complete; this is the applicant's responsibility. Students with less than the minimum GPA (see above), with other undergraduate majors, or with course deficiencies may request special consideration from the departmental Graduate Committee.

NOTE! No more than 13 quarter units of courses applicable toward the master's degree completed before admission to the program may be counted toward the degree.

Acceptance into a Faculty Lab

During the admission process, students interested in the M.S. program are encouraged to obtain information about research interests of the faculty and to contact faculty members who could potentially serve as thesis advisors. Faculty in the Biology department conduct research in a variety of biology subdisciplines including *Cell Biology, Plant Physiology, Developmental Biology, Medical Microbiology, Parasitology, Molecular Genetics, Vertebrate Physiology, Neurobiology, Physiological Ecology, Marine Biology, Community and Population Biology, Conservation Biology, Immunology, Cell Biology, Entomology, Plant Biology and Animal Biology*. Prior to applying to the biology department or, at least during the application process, students are encouraged to obtain information about the research interests of the biology faculty and to contact those individuals with whom they might like to work. and have as their thesis advisor.

Curricular Requirements

The programs in biological science provide for the degree to be obtained under either an M.S. or an M.A. (See descriptions below).

Granting The Degree

Upon successful completion of the above requirements for either the M.S. or M.A. degrees, the department will recommend that the candidate be granted the degree.

Other Degree Requirements

In addition to departmental requirements, every student must also satisfy the university requirements for graduation which are described in the Graduate and Post-baccalaureate Studies chapter at the beginning of the graduate section of this catalog. These requirements include the 32-unit residence requirement, the five-year rule on currency of subject matter, the minimum number of units of 6000-level courses, the 3.00 GPA, and the University Writing Skills requirement.

Thesis Plans

There are now three thesis plans from which you can choose. You should make your choice based on your future career plans and/or in consultation with your advisor.

The Master's of Science (M.S.) in Biological Science (45 units)

This is a research-based thesis program. The majority of students admitted to the M.S. program in Biology complete this kind of thesis. This research consists of data collected from experiments conducted by the student during the time the student is in the graduate program here. In addition to completing the research and writing the thesis, M.S. students must take an oral examination administered by the thesis committee covering the candidate's area of specialization and thesis research.

Program Requirements

A *Conditionally Classified Graduate* student must become a fully *Classified Graduate* student in the program as set forth in 1, 2, 3, and 4 below, if applicable, within

four quarters of acceptance into the Master's program or the *conditional* classification will expire and the student will be placed in *Unclassified Post-baccalaureate* status. It is the responsibility of the student to make sure these requirements are met within the specified time limits.

- 1) Establish a three-person Graduate Advisory Committee by the end of the second quarter after admission to the program. At least two faculty members from the Department of Biological Sciences will serve as members of the committee. One faculty member from the department will normally be the major advisor in guiding the student in graduate training. Other members of the committee will be chosen in consultation with the major advisor. The committee will advise on and approve the student's final program including any work and research units counted toward the degree. This advisory committee will also administer the oral examination at the completion of the thesis.
- 2) Complete basic course deficiencies. If the student lacks basic courses in biological or physical sciences, or mathematics/statistics, these courses must be completed by the end of the fourth quarter following admission to the program. In addition, the student's advisory committee may also determine that there are other course deficiencies to be completed.
- 3) Research proposal. M.S. students must submit a formal research proposal to the departmental Graduate Committee. It must be approved by the student's advisory committee (item 1 above) and submitted to the Graduate Coordinator by the first day of the quarter in which the student wants to begin taking thesis units. If the work is to be done in an off-campus location, a letter of agreement must be included that indicates a mutual understanding and responsibility between the off-campus supervisor, CSUEB, and the student. The department office or Graduate Coordinator has examples of these proposals and their format.
- 4) University Writing Skills Requirement. The Writing Skills Graduation Test must be passed. Satisfaction of the University Writing Skills Requirement (UWSR) must begin during the first quarter of admission to the program and must be completed before a student can become a fully *Classified Graduate* student. (See <http://www.csueastbay.edu/ecat/current/q-010gradst.html#section12> for more information).

NOTE: It is the responsibility of the student to establish a graduate advisory committee, take the qualifying examination, and complete course deficiencies within the time limits stated above.

Requirements For Advancement To Candidacy

The student must have:

- 1) attained *Classified Graduate* standing

- 2) completed at least 12 quarter units of satisfactory work beyond the baccalaureate degree suitable for inclusion in an M.S. program in Biological Science as approved by the student's graduate advisory committee. At least 3 quarter units of graduate level coursework in residence at Cal State Hayward must be included. (Satisfactory work in a graduate program is that showing a GPA of 3.00 in all courses; no grade below "C" may be counted in this program).
- 3) receive approval from his/her Graduate Advisory Committee approval of an individual research program.

Curricular Requirements

- 1) University Thesis (9 units). Complete copies of the University Thesis must be submitted, in accordance with the rules set forth by the Thesis Editor in the Office of the Associate Vice President, Academic Programs and Graduate Studies to the chair of the candidate's advisory committee by the sixth week of the quarter at the end of which the degree is desired.
- 2) Graduate courses in biology (14-36 units) in area of specialization or related to the student's special concentration option. Courses are considered to be at the graduate level if they are numbered at the 5000 level or better. These graduate course units must include at least one, but no more than two, graduate seminars in the area of the student's area of concentration. Students may also take up to a maximum of 4 units of Independent Study (BIOL 6900) and count them toward their graduate degree. All courses should be approved by the student's graduate advisor and/or graduate advisory committee prior to a student taking them.
- 3) Upper division biology majors courses (0-22 units). These are biology courses numbered at the 3000 or 4000 level. For these courses to count toward your degree, you must take them after you have officially been accepted into the graduate program. In addition, these courses should be approved by the student's graduate advisor and/or their graduate advisory committee.
- 4) An oral examination administered by the advisory committee covering the candidate's area of specialization and thesis research. This examination will be publicized and open to all faculty. (See below for more information).

NOTE: Students must maintain a GPA of 3.0 or above and no grade lower than "C" in courses included in the program.

Other Degree Requirements

In addition to departmental requirements, every student must also satisfy the university requirements for graduation which are described in the Graduate and Post-baccalaureate Studies chapter at the beginning of the graduate section of this catalog. These requirements include the 32-unit residence requirement, the five-year rule on currency of subject matter, the minimum number of units of 6000-level courses, the 3.00 GPA, and the University Writing Skills Requirement (UWSR). For information on

meeting the University Writing Skills Requirement, see the testing Web site at www.testing.csueastbay.edu or call (510) 885-3661.

Granting the Degree

Upon successful completion of the above requirements, the department will recommend that the candidate be granted the M.S. degree.

The Master's of Arts (M.A.) in Biological Science

This program involves is essentially a non-research Master's degree program the culminating experience of which is a comprehensive examination in a chosen concentration area. The areas of concentration include: 1) cell & molecular biology, 2) physiology, and 3) ecology and conservation biology. Students completing this program should take coursework that pertains to the concentration they choose since you must take and pass a written comprehensive examination in that area. More information on choosing courses can be found below.

Program Requirements

A *Conditionally Classified graduate* student must become a fully *Classified Graduate* student in the program as set forth in 1, 2, and 3 below, if applicable, within four quarters of acceptance into the Master's program or the *Conditional* classification will expire and the student will be placed in *Unclassified Post-baccalaureate* status. It is the responsibility of the student to make sure these requirements are met within the specified time limits.

- 1) Specify the area of proposed course and comprehensive exam specialization in writing to the Department of Biological Sciences. Examples of areas of specialization are available from the department or Graduate Coordinator.
- 2) Complete basic course deficiencies. If the student lacks basic courses in biological or physical sciences, or mathematics/statistics, these courses must be completed by the end of the fourth quarter following admission to the program.
- 3) University Writing Skills Requirement. The University Writing Skills Requirement must be satisfied. (See Graduate and Post-baccalaureate Studies chapter at the beginning of the graduate section of this catalog.)

Requirements for Advancement to Candidacy

The student must have:

- 1) attained "Classified Graduate" standing
- 2) completed at least 12 quarter units of satisfactory work beyond the baccalaureate degree suitable for inclusion in an M.A. program in Biological Science as approved by the graduate advisory committee. At least 3 quarter units of graduate level coursework in residence at Cal State East Bay must be included. (You must maintain

a 3.00 GPA in your degree coursework to remain in good standing.)

- 3) met with a faculty advisor in the student's area of course and comprehensive examination specialization to plan for the comprehensive examination.
- 4) register for 2 units of BIOL 6901 Comprehensive Examination Preparation in the spring quarter of the year in which the comprehensive examination is to be completed.

Curricular Requirements

A total of 45 quarter units is required beyond the baccalaureate with a GPA of 3.0 or above and no grade lower than "C" in courses included in the program and with specific requirements as follows:

- 1) Graduate courses in Biology (21–43 units) in area of specialization as approved by the student's graduate advisor; included must be at least one, but not more than two, graduate seminars in the area of special concentration. (May not include units of Cooperative Education (BIOL 6898), Independent Study (BIOL 6900), or University Thesis (BIOL 6910).)
- 2) Upper division undergraduate Biology majors courses (0–22 units) taken as a graduate student and approved by the advisory committee as appropriate to the student's objective.
- 3) BIOL 6901 Comprehensive Examination Preparation (2 units); taken in spring quarter in the final year of the program.
- 4) Successful completion of comprehensive written examination in area of specialization in Biological Sciences.

Other Degree Requirements

In addition to departmental requirements, every student must also satisfy the university requirements for graduation which are described in the Graduate and Post-baccalaureate Studies chapter at the beginning of the graduate section of this catalog. These requirements include the 32-unit residence requirement, the five-year rule on currency of subject matter, the minimum number of units of 6000-level courses, the 3.00 GPA, and the University Writing Skills Requirement (UWSR). For information on meeting the University Writing Skills Requirement, see the testing Web site at www.testing.csueastbay.edu or call 510.885.3661.

Granting the Degree

Upon successful completion of the above requirements, the department will recommend that the candidate be granted the M.A. degree.

The M.S. Degree in Marine Science

The M.S. degree in Marine Science is offered at Moss Landing Marine

Laboratories, located on Monterey Bay, for students from Cal State East Bay and seven other California State University consortium schools. Graduate students from Cal State East Bay may also take such courses at Moss Landing as are appropriate for their degree objectives. Contact the Biological Sciences Department for application forms and deadlines for this program. See Marine Sciences in the graduate section of this catalog.

Certificate in Biotechnology

The Biotechnology Certificate Program within the department is a post-baccalaureate program emphasizing cellular, molecular, and immunological techniques. With careful planning, this certificate may be combined with the M.S. in Biological Science degree.

This certificate program consists of 26 units and is designed to give recognition to students who complete a curriculum emphasizing cellular, molecular, and immunological techniques. This is an appropriate capstone for biology or chemistry students and is preparatory for careers in industrial and academic biological research, development, and production. The Biotechnology Certificate Program requires 26 units of advanced work. The laboratory courses, important to this program, emphasize a "hands-on" approach with close faculty supervision. In addition to experimental techniques, safety standards and quality control are also stressed. Courses are scheduled in a non-conflicting pattern so that a full-time student entering this program can complete the requirements in one academic year. There are over 300 biotechnology companies in the Bay Area with a growing demand for employees skilled in the technical subjects herein outlined. Seven faculty members from the Departments of Biological Sciences and Chemistry share the responsibility for this program and play an active role in arranging employment interviews for students who successfully complete this certificate program.

Admission to the Biotech Program

The Certificate Program in Biotechnology is open to undergraduates and graduates of accredited institutions who have a degree major in any field of biological sciences or chemistry and who have achieved a GPA of at least 2.75 in the major and at least 3.0 in the prerequisite courses. Applicants failing to meet these criteria may petition the Biotechnology Committee for a waiver of these requirements.

Program Requirements

Prerequisites

Applicants must have major in biology or chemistry, and have completed the courses listed below or their equivalents. Participants in this program will be selected by the Biotechnology Committee of the Department of Biological Sciences.

- BIOL 1401 Molecular and Cellular Biology, or equivalent (taken within last 3 years)
- BIOL 3121 Principles of Genetics or equivalent (taken within last 3 years)
- BIOL 3122 Principles of Developmental Genetic Analysis or equivalent (taken within last 3 years)

- BIOL 3405 Microbiology or equivalent
- CHEM 4411 General Biochemistry or equivalent

Continued Participation in the Program

Students must maintain a 3.0 GPA in the program for continued participation and pass a comprehensive examination upon completion of the program.

Students who have a baccalaureate degree and wish to combine the Biotechnology Certificate with an M.S. in Biological Science should be aware that only 13 units earned prior to admission to the Master's Program may be applied to a graduate degree. Students wishing to pursue the M.S. degree in Biological Science must also complete the application process to be considered for the M.S. degree.

Curricular Requirements

Students are required to take the following courses:

• BIOL 4450 Cell Culture Techniques	4 units
• BIOL 4485 PCR, DNA Sequencing and Fragment Analysis	4 units
• BIOL 6140 Recombinant DNA Techniques	4 units
• BIOL 6151, 6152 Cell and Molecular Biology I, II	5 units each
• <u>CHEM 6430 Protein Chemistry Techniques</u>	4 units
<u>Total: 26 units</u>	

Research Space

Research space is available to all *Classified Graduate* students in the Biology M.S. program; the space is usually in the major advisor's research lab. Department facilities for student research and study include invertebrate, vertebrate, and entomology museums; herbarium; greenhouse; insectary; histology lab; radiation hot lab; microbiology facilities including those for anaerobic culture; cell culture facilities; animal rooms; molecular biology labs; and DNA sequencing facilities. Local field opportunities may be found at a wetlands field station at the San Francisco Bay National Wildlife Refuge, the brackish and salt water marshes of the Hayward Regional Shoreline of San Francisco Bay, and a 35-acre oak-grassland preserve located immediately adjacent to the Hayward Hills campus and contiguous with Garin Regional Park (one of the East Bay Regional Parks).

DEADLINES

Former biology Master's students have completed their degrees in a variety of time periods. In an ideal world, where working on your thesis is your primary focus, you should expect to take 2-3 years to complete it (it will take longer if you have other responsibilities that also place demands on your attention and time). Below is an example of a schedule for an M.S. student accepted into *Classified* status that is aligned with a 3-yr timeline:

Year one:

- Take coursework (complete any deficiencies)
- Choose members of your Graduate Advisory Committee (end of year one; see description below)
- Complete research proposal (see description below) and advance to candidacy (end of year one; see description above)
- (• Begin conducting research)

Year two:

- Committee meeting (first quarter: discuss proposal, progress)
- Complete coursework
- Conduct experimental research/review of the literature
- (• Begin writing thesis)

Year three:

- File for graduation; do a *graduation check* (see description below) with your thesis advisor.
- Complete research/literature review
- Complete thesis writing (see description below)
- Defend thesis

Below is an example of a schedule for an M.A. student accepted into *Classified* status that is aligned with a 3-yr timeline:

Year one:

- Take coursework (complete any deficiencies)
- Indicate in writing intention to complete an M.A. (end of second quarter)

Year two:

- Meet with faculty advisor in specialty area (first quarter: discuss comprehensive examination subject area and preparations)
 - Complete coursework
 - Sign up for 2 units of BIOL 6901 (spring quarter)
 - Complete comprehensive examination (end of spring quarter)
-

**PART II: NAVIGATING THE BIOLOGY
MASTER'S PROGRAM**

IMPORTANT PEOPLE

The Graduate Coordinator

The current Biology Graduate Student Coordinator is [Dr. Maria Gallegos](#). Her responsibilities include heading the Biology Graduate Committee, which is responsible for the review of applicants to the Biology Master's program and providing program advice to potential and current graduate students.

The Major Advisor

This individual, a Biology faculty member, will guide your research efforts to completion and oversee all aspects of your graduate studies. Consequently, you should choose a faculty member whose research interests and expertise are aligned with yours.

This choice of your major advisor should be given considerable thought, since you will have a close working relationship with this individual for the remainder of your degree program, and close professional and personal contacts thereafter. The major advisor-student relationship, which is based on mutual agreement, should be established prior to your entering the department.

One of the best things you can do to secure a thesis advisor is to do *well* in the courses you take! You will need to impress faculty with your abilities, interests, motivation, and potential to do well in a graduate program. There is no single method for securing a thesis advisor; you need to try to match your interests with those of the faculty. But, more importantly, you need to visit with faculty, talk to some other graduate students, and determine who you think might be an advisor you would want to work with. Remember, however, that a faculty member is not required to take you as a graduate student.

The Graduate Committee

Once you have secured a thesis advisor, you should work with your advisor to choose a graduate advisory (thesis) committee. The committee functions to establish a course of study for the degree program, to conduct the oral examination/thesis defense and to review the content of the thesis.

Your graduate committee should be composed of faculty who can provide both breadth and depth of experience and knowledge in assisting you in your graduate studies. Your thesis committee must consist of a minimum of 3 people, with at least 2 of those people being regular faculty in the Department of Biological Sciences. If you plan to conduct your research in an off-campus location, a letter of agreement is needed from your off-campus supervisor that indicates a mutual understanding and responsibility between you, the off-campus site, and Cal State East Bay about the research that will be conducted and used for the Master's. Your off-campus supervisor may be a member of your thesis committee.

COURSEWORK

If you have a thesis advisor, you should work with your thesis advisor to determine the most appropriate courses to take for your area of specialization. If you do not have a thesis advisor, then the Graduate Coordinator will help you to choose classes.

No matter what your degree program, the idea is that the courses you take should be related to your major field of interest and should adhere to the criteria listed for the thesis plan you are following (see specifics above). The courses you take should be selected from the Department of Biology course list. On occasion, courses from other departments (i.e., Environmental Studies, Earth and Environmental Studies, Geography, Chemistry and Biochemistry) may be acceptable but you must work this out with your advisor and/or your graduate committee.

General rules of thumb to keep in mind as you are developing your course plan are as follows:

- courses that are required for the undergraduate biology degree (B.S., general and all other options, or B.A.), may NOT be counted toward your graduate degree
- courses that are designated as being for non-majors (generally those Biology courses with a number 0 in the second number, for example 1001, 2040, 3060) may NOT be counted toward the M.S. degree.
- if you are approved to take courses outside of the Biology department, they need to be relevant to your field of specialization
- you earn a “C” or better in every course in order for them to be counted toward your degree. In addition, you must maintain a minimum GPA of 3.0.
- you can count up to 13 units of post baccalaureate courses toward your degree
- you can count courses you earned in the last quarter of your undergraduate toward your degree

You can read more about the individual courses offered by the Biology department by reviewing the CSUEB catalog. It is available for purchase at the bookstore. Alternatively, you can find it online:

The list of graduate-level courses offered by the department can be found [here](#).

The list of undergraduate-level courses offered by the department can be found [here](#).

You can also visit the [department website](#) to view the courses available for the current quarter and those predicted to be taught in the Fall, Winter and Spring quarters of the entire academic year.

You do not have to be enrolled in classes to graduate, however you should be enrolled if you still plan to conduct research on campus and/or use campus facilities including computer labs, library, equipment, etc. Students who have finished all 45 units of coursework, including thesis units, if applicable, may enroll in one unit of **General Studies X6990 Graduate Study Completion** through Continuing and Extended Education. The fee for this 1-unit course is much less than it would cost to

enroll for one unit through regular registration. Enrolling for the Graduate Study Completion unit will provide you with a valid student ID card, give you access to the library, computer labs, science labs, and allow you to purchase a parking permit. For more information about how to sign up for **Graduate Studies Completion GS X6990**, click [here](#).

Taking Thesis Units (BIOL 6910)

Students completing an M.S. must take 9 units of BIOL 6910 thesis units. You cannot begin taking thesis units until after your thesis proposal has been approved by your thesis committee. In addition, members of the Graduate Committee must sign off on the thesis proposal no later than the first day of the quarter in which thesis units will be taken.

When registering for thesis units, the student should enroll with their advisor. There is a special form that both the student and their advisor must fill out and turn into the departmental office. This form is available in the Biology office. The student should sign up for the CR/NC grading basis.

Prior to graduation, the grade assigned for a student taking thesis units is “RP” (= report in progress). After the student passes his/her oral defense of the thesis, their advisor changes the thesis unit grades to “CR” (= credit).

Registering for Classes

Students are not allowed to register for classes until they have paid all fees, deposits, and charges. Instructions and dates for enrolling in **MyCSUEB**, the Cal State East Bay automated enrollment system, are published quarterly in the online [Class Schedule](#). Approximately one week before enrollment begins, students who are eligible to register for classes are e-mailed notification to their CSUEB Horizon accounts to check MyCSUEB for their enrollment appointment. The appointment times include your date and time to begin enrolling for classes. New students will be able to view their enrollment appointments on MyCSUEB.

Registration Priorities

The priority for enrollment, as approved by the University Academic Senate, is as follows:

- a) Students authorized to receive priority enrollment
- b) Graduating undergraduate seniors and graduating graduate students
- c) Freshmen
- d) Graduate
- e) Seniors and unclassified post-baccalaureates
- f) Juniors
- g) Sophomores

Students actually register for classes during two enrollment times. This process is designed to allow students the opportunity to enroll in their first choice classes during their first enrollment block and attaining full-time status. Existing enrollment priorities will be kept based on class levels, with graduating seniors having highest priority. In MyCSUEB, you may enroll for a maximum of 16 units during the first enrollment period.

During the second enrollment period and scheduled open enrollment times, you will then be permitted to enroll in up to the maximum of 22 units.

*NOTE: You will not be able to enroll for Independent Study or Thesis units in MyCSUEB. Instead, you must complete a **Special Registration Petition** which is available in the departmental office.*

Late Registration

Late Registration occurs after the first fee payment deadline until the add/drop deadline and is available to students eligible to enroll who were unable to enroll during their enrollment appointment times. If you complete the enrollment process in MyCSUEB during this Late Registration period, you are assessed a nonrefundable "Late Registration" fee.

Academic Probation

If you fail to fulfill enrollment or matriculation requirements, or otherwise fail to adhere to academic or Cal State East Bay regulations, you are subject to immediate administrative action which may result in your being placed on Administrative Probation, or having enrollment for that term cancelled. Students who do not maintain continuous enrollment for three consecutive terms are subject to cancellation of enrollment.

Schedule Changes

You may adjust your class schedule (e.g., add, drop, waitlist, swap courses) anytime after your enrollment appointment begins, during open enrollment times, through the end of the Add/Drop period using **MyCSUEB**. If you are on a Wait List and wish to add a class, it is important that you attend the first class meeting (refer to the **Class Schedule** for specific instructions). Although departments may drop you from a class if you fail to attend the first meeting, they do not have to do so. Therefore, if you wish to drop a class, be sure to do so in MyCSUEB during the first two weeks of the quarter.

"Full Time" Versus "Part Time" Standing

Graduate students enrolling in 7 units or less of coursework are considered to be enrolled at a "part-time" status. Graduate students must enroll in a minimum of 8 units per quarter to receive "full-time" status. Since most biology courses are four units, 8 units equates to approximately two courses.

THE WRITING SKILLS TEST

What is the Writing Skills Test?

The California State University system requires all students to demonstrate writing competency at an advanced level in order to receive a baccalaureate or master's degree. This requirement was implemented system-wide in 1977 to ensure that graduating students possess writing ability at the university level. You must satisfy the **University Writing Skills Requirement (UWSR)** in order to receive a degree from CSUEB unless you previously satisfied this graduation writing proficiency assessment for a previous East Bay (Hayward) degree or at another CSU campus. The Writing Skills Test (WST) is one way to satisfy this requirement; it must be taken in your first quarter of admission to the graduate program.

Do I Have to Take the Writing Skills Test?

You may not have to take the Writing Skills Test if you have met certain circumstances. In those cases, you may apply for a waiver for the WST. To find out more about this, click [here](#) or visit: <http://www20.csueastbay.edu/academic/colleges-and-departments/apgs/testing/uwsr/waiver.html>. You should Inform the **Graduate Coordinator** if you believe you are exempt from the Writing Skills Test.

NOTE: Courses taken to satisfy the UWSR do NOT count toward the units for the M.S. degree. Please note that these courses do NOT count toward the units for the M.S. degree.

ALSO NOTE: Completion of the BCP does not require that students take and pass the WST.

THE THESIS, THESIS PROPOSAL AND THESIS DEFENSE

What is a Thesis?

Your will spend a significant amount of time as a graduate student working on your thesis. A thesis is the written product of a systematic study of a significant issue. In the thesis, you are expected to identify the issue, state your major assumptions, explain the significance of your project, detail your sources for and methods of obtaining data, provide analysis of the data, and offer conclusions. Your thesis should demonstrate original critical and independent thinking, appropriate organization and format, and thorough documentation. The completed thesis must be submitted to the student's Thesis Committee in written form, typically called a *dissertation*, and then defended in an oral examination, which is called a *defense* (see more on this below). Thus, the selection of a thesis topic is critical.

While deciding on a thesis topic, students are encouraged to seek the guidance of their major advisor. The Department urges that this be a creative process, but the student must understand the thesis topic and, ultimately the completed dissertation, must garner the approval of all members of the Thesis Committee. Thus, it may be

appropriate for students to consult with the rest of their Thesis Committee before finalizing the thesis topic.

One simple way to gather input from the entire committee and to ensure that they are all satisfied with the nature of the thesis topic prior to the student writing his/her thesis proposal is to have a meeting, during which this issue is discussed. Alternatively, the student might choose to contact their Thesis Committee members individually via phone or e-mail to discuss their potential thesis topics.

The Thesis Proposal

In practice, the thesis proposal (and thus the dissertation) can be presented in a variety of acceptable formats, the most straightforward being the statement of a hypothesis with a detailed description of how it will be tested experimentally. As an alternative, the student might propose, on advice from the major advisor, a body of work which might constitute either a technical achievement or a “scientific first”. The resulting dissertation may not state a hypothesis and its testing; nevertheless, it may equally fulfill the University Thesis requirement if approved by the Thesis committee. The key to both types of proposals is the necessity for some element of uniqueness when it comes to the thesis topic. Whatever the thesis proposal and resulting dissertation, the student should ultimately strive for results acceptable for publication in a scientific journal.

Format for the Thesis Proposal

You should adhere closely to the format below, with sections clearly labeled. Approved proposals have typically averaged about ten pages or so in length, not including references. All sections should be written in complete sentences; outlines are not acceptable.

- 1) *Summary/Abstract of the Project:* Explain the overall goal of the proposed research.
- 2) *Statement of the Thesis:* a) In this section, include a discussion of published literature relevant to the thesis topic. Consult with your Thesis Committee on how extensive this review should be. b) Statement of the thesis as it relates to the literature review and proposed research.
- 3) *Significance of Proposed Research:* This section is especially important to a thesis proposal that is not hypothesis driven. State in detail the uniqueness of the proposed research (i.e., what would make this research publication-worthy?).
- 4) *Description of Experiments Designed to Test the Hypothesis:* When possible, include alternative experimental outcomes and how they might bear on the hypothesis.
- 5) *References Cited.*
- 6) *Research Space:* Numerous potential research facilities are available within the department. Students are encouraged to consult with their thesis advisors to ensure that they are provided with research space that is most compatible with their individual research needs.

Additional Information regarding the content and format of the thesis proposal for the M.S. thesis can found in the Biology office (NS429) and from the Graduate Coordinator.

Timeline for Writing Your Thesis Proposal

You should plan to write your thesis proposal before you are planning to take thesis units. Generally, this occurs after the first year of coursework. Your thesis proposal should be given to your thesis committee members approximately one month before the start of the quarter in which you plan to take thesis units to allow time for your committee members to read and comment on your proposal and for you to make changes in regard to those comments.

Your thesis proposal must be given to the Graduate Coordinator in Biological Sciences on or before the first day of classes in a quarter to take thesis units that quarter.

PLEASE NOTE: It is the student's responsibility to meet this deadline and to allow the thesis committee adequate time to read the proposal and provide comments before it is due; NO EXCEPTIONS will be made.

The Signature Page

Before you turn in your proposal, you must have your all of your committee members, including your thesis advisor, sign off on your proposal. There is a preformatted *signature page* on which your committee members must provide their signatures. You can find this form in the Biology office.

Writing Your Master's Thesis

You should plan to write your thesis proposal before you are planning to take thesis units. Generally, this occurs after the first year of coursework. Your thesis proposal should be given to your thesis committee members no later than one month before the start of the quarter in which you plan to take thesis units to allow time for your committee members to read and comment on your proposal and for you to make changes in regard to those comments. Your thesis proposal, with approval signatures of your thesis committee, including your thesis advisor, must be given to the Graduate Coordinator in Biological Sciences on or before the first day of classes in a quarter to take thesis units that quarter.

NOTE: It is the student's responsibility to meet this deadline and to allow the thesis committee adequate time to read the proposal and provide comments before it is due; NO EXCEPTIONS WILL BE MADE!

University Formatting

There are certain formatting guidelines by which your thesis must ultimately adhere. These guidelines are described in the [University Thesis Writing Guide](http://www20.csueastbay.edu/academic/files/pdf/University%20Thesis%20Writing%20Guide%202011-2012-%20rev.pdf) which can be found on the web at:

<http://www20.csueastbay.edu/academic/files/pdf/University%20Thesis%20Writing%20Guide%202011-2012-%20rev.pdf>.

Submit the entire, final manuscript to the **Academic Programs and Graduate Studies Student Services** office (WA 877) for format review by the "format review" deadline. The copy you submit for format review should be your final, approved thesis. (Your committee members have approved the text of your thesis and require no further changes). Your thesis should be complete except for the signatures of your committee members on the approval page.

NOTE: It is important that your approval page layout be reviewed and accepted by the Thesis Editor in Academic Programs and Graduate Studies before you ask your committee members to sign the page.

Be sure to complete the *Thesis Submission Information* form and include it with your thesis when you submit it for review.

Committee Signatures

After the *Thesis Editor* in Academic Programs and Graduate Studies completes the format review of your thesis, obtain approval signatures from your University Thesis committee.

NOTE: You must type each committee member's name under each corresponding signature line.

Thesis Binding and Required Copies

All graduate students are required to submit a bound copy of their approved, final copy to the CSUEB library. In addition, Biology graduate students must submit a copy to the Biology department. Copies of past theses are currently housed in the Biology stockroom and must be signed out by a Biology faculty member. Finally, it is an informal practice for graduate students to provide a bound copy of their thesis to their primary graduate advisors.

To get your thesis bound, you can submit a photocopy (or original print - outs) of your thesis to the **Academic Programs and Graduate Studies Student Services** office (WA 859 or 877). You should plan to request a minimum of two bound copies: one for the University Library and another for the biology department (*NOTE: Marine Science requires two bound copies*). Additional bound copies can be ordered for personal use. If you want copies for yourself, include the quantity in your order.

Paying for Binding

There is a separate handout titled *Thesis Binding Charges* which is provided during the format review with the *Thesis Editor* from the Academic Programs and Graduate Studies Student Services office (WA 877). Make check cashier's check or money order payable to *Valley Library Bindery* and present it to the Academic Programs and Graduate Studies Student Services office along with the multiple copies. After payment is made, the Academic Programs and Graduate Studies Student Services office will notify the graduation evaluators in Planning and Enrollment Management that your thesis has been accepted. You can pick up personal copies of the bound thesis.

Approximately three to four weeks into the following quarter, the bindery will deliver the bound copies of the theses to the Academic Programs and Graduate Studies Student Services office (WA 859 or 877). Academic Programs and Graduate Studies will then send a copy of your thesis to your department and to the University Library, and will notify you by phone or email to pick up your personal copies.

Access to Theses Written by Past Biology Graduate Students

All graduate students are required to submit a bound copy of their approved, bound copy to the CSUEB library. In addition, most Biology graduate students submit a copy to the Biology department. These copies are currently housed in the Biology stockroom and must be signed out by a Biology faculty member. Finally, most graduate students provide a bound copy of their thesis to their primary graduate advisors.

The Thesis Defense

The thesis defense consists of a public presentation of the work in a seminar. This seminar should be publicly advertised at least a week before the date of your seminar and it will be open to the faculty, staff and students of the biology department as well as to other members of the CSUEB community. Historically, Master's defense seminars in the biology department have lasted approximately 30-45 minutes, including time for questions and answers.

Your seminar will be followed by an oral examination. This oral exam is not open to the general public; instead only the student and his/her advisory committee are in attendance. In addition, interested biology faculty may attend and contribute to this session. During the oral examination, members of your committee take turns asking you questions pertaining to your thesis work, biological concepts related to your thesis work and/or any other information as specified by your committee members.

Following your examination, your committee may opt to: a) pass you, b) fail you with an option to retake the oral examination at a later date or c) fail you without the option to retake the oral examination at a later date. In the case of "a" and "b", your committee may also ask you to address major or minor revisions associated with your written thesis.

Defense Etiquette

We suggest you give your thesis committee at least a minimum 2-4 weeks to read your thesis and prepare for your defense.

APPLYING FOR GRADUATION

You must file for graduation one quarter *before* the quarter in which you plan to graduate. For example, if you plan to graduate at the end of spring quarter, you must file for graduation during the first week of winter quarter. It is YOUR responsibility to make sure you file for graduation at the correct time. You will do a grad check with your advisor at this time. The grad check must be approved by the Graduate Coordinator to be valid.

Departmental Requirements

You need to apply for graduation one quarter in advance of the term in which you intend to graduate. For example, if you plan to graduate at the end of spring quarter, you must file for graduation during the first week of winter quarter. It is YOUR responsibility to make sure you file for graduation at the correct time. You will do a *grad check* with your advisor at this time.

The “Grad Check” (Under Construction)

University Requirements

You must apply prior to the add/drop deadline. Deadlines to file are listed in the online class schedule each term. Log into [MyCSUEB](https://my.csueastbay.edu) on the university website (<https://my.csueastbay.edu>) and click on *Apply for Graduation*. You will be prompted to select the term for which you wish to graduate. A confirmation page will appear. Print this page and give a copy to your department.

Graduation Fees

The graduation filing fee will be charged to your account after you file. You can pay your fee in one of the following ways:

- online at MyCSUEB (<https://my.csueastbay.edu>)
- in person at the Cashiers' Office in Student Information Lobby of Warren Hall on the Hayward Hills campus
- in person in the Academic Services Office on the Concord Campus

The fee covers the cost of the graduation check, the diploma, and participation in the annual commencement ceremony (but not cap and gown rental/purchase, which is handled separately by the Bookstore). The fee is non-refundable, but if you do not graduate when you intended, the fee will be transferred to the subsequent quarter automatically.

Registering for Courses as a Graduating Student

When you file for graduation, you may obtain a new registration priority. To register as a graduating graduate student, you must be a *Classified Graduate* who is recommended for *Advancement to Candidacy* by your advisor and have made substantial progress towards your degree.

If you are completing a graduate Single or Multiple Subject Credential Program, be certain that the appropriate check sheet is submitted by the department or program committee offering the program to the Credential Student Service Center in the College of Education and Allied Studies.

The Diploma

Once you have completed all degree requirements and **Enrollment Management** can verify their completion, your diploma will be ordered. The final graduation evaluation process typically takes up to three months following the posting of grades from your last quarter of attendance. Your diploma will be mailed to your

address of record with the university 4-6 weeks after this final graduation check is completed.

A diploma is an official document containing the embossed seal of CSUEB, your name, the degree conferred and date, major(s) completed in the degree conferred, any options or minors completed and requested, type of honors if any, and the signatures of state and university officials. It is not reproducible or available in multiple copies. You can obtain multiple copies of your record by ordering transcripts which also show degrees, majors, options, minors, and honors, as well as other information. If you need proof of completion of your degree before receiving your diploma, you may request a verification of graduation or a transcript from Enrollment Management. Should you change your name, you may request that a new diploma be issued with your new name if (1) you return the originally issued diploma to Enrollment Management, (2) you provide legal documents confirming your legal name change, and (3) you pay the fee for a new diploma.

Changes to the Diploma

Once your degree is posted to your permanent record, your diploma and transcript cannot be altered by adding additional options and/or minors, or by grade changes, withdrawals, and/or academic renewal. The university protects the integrity of its transcripts and will not rewrite history unless a University error has occurred.

FINANCIAL SUPPORT

Financial aid within the department is limited. Consequently, there are only limited funds for graduate research supplies available each year from the department budget. There are other means of financial support that may be potentially available to students. These are listed below:

Teaching Assistantships

TA-ships are available on a limited basis each quarter. Availability of these positions is dependent upon a variety of factors including student enrollment and faculty assignments. Notification of TA-ships will be posted before each quarter. Priority will be given to current graduate students with seniority and relevant educational background. To maintain your eligibility as a TA, you must maintain a 3.0 GPA and register for a minimum of one unit. For more information, you can talk to the Department Chair and the Biology Office Staff.

Courses for which teaching assistantships are commonly available are:

BIOL 1000 (Basic Concepts in Biology), BIOL 1002 (Intro. Biology lab), BIOL 1401 (Cell and Molecular Biology), BIOL 1402 (Plant Biology), BIOL 1403 (Animal Biology), BIOL 2010 and 2020 (Human Anatomy and Physiology I and II), and sometimes BIOL 3110 (Principles of Ecology), BIOL 3151 (Principles of Animal Physiology) or BIOL 3405 (Microbiology).

Research Assistantships

Some faculty may have research assistantships (RAs) available through their research grants. The availability of RAs are dependent on the status of individual faculty grants. You need to check with your advisor to determine whether an RAship is available for you.

Internal (CSUEB) Grants

There are a number of internal grants for which graduate students may apply. Below is a short list of some of these opportunities:

Student Research Fellowships

These grants are intended to stimulate and support student research. Research does not have to be related to a master's thesis or project. Research must be done in collaboration with a faculty member and with other students. For more information on this opportunity, click [here](#), visit <http://www20.csueastbay.edu/orsp/csr/> or contact

Dr. Jason Singley in the Physics department at jason.singley@csueastbay.edu

Graduate Equity Fellowships

These grants range from \$500 to \$2000 per year. This program seeks to increase the diversity of students completing graduate degree programs in the CSU, encourages continuation towards doctoral programs, and promotes consideration of university faculty careers. It provides fellowships for economically disadvantaged CSU students, who have had success in overcoming educational disadvantages, and promotes faculty mentoring and research opportunities. For eligibility and application

requirements, click [here](#) or visit: <http://www20.csueastbay.edu/academic/colleges-and-departments/apgs/office-graduate-studies/graduate-opportunities-and-financial-resources.html>.

Annual CSU Student Research Competition

The 19th Annual CSU Student Research Competition provides students with the opportunity to showcase a recently completed research project, make professional contacts, add to their resume, and represent Cal State East Bay. This system-wide competition at CSU Sacramento will showcase excellent research conducted by CSU students in the full range of academic programs offered by the CSU. Undergraduate or graduate students currently enrolled at CSUEB, as well as alumni/alumnae who received their degrees in 2004, are eligible and encouraged to apply. Travel expenses to CSU Sacramento for members of the Cal State East Bay Team will be covered. Cash prizes are awarded for the outstanding presentation. There are first and second place winners in both undergraduate and graduate categories.

California Pre-Doctoral Program

This program seeks to increase the pool of potential faculty by supporting the doctoral aspirations of CSU students who have experienced economic and educational disadvantages. CSU juniors, seniors, or graduate students who are U.S. citizens or permanent residents are eligible to apply. Applicants will be selected on the basis of three major criteria: potential for success in completing a doctoral program, probable effectiveness of the student/faculty plan, and level of economic and educational disadvantage. Applicants work with a faculty sponsor to develop an overall plan which will ultimately lead to enrollment in graduate school. The program provides travel funds, funds for other related activities, and an opportunity for summer internships. Applications are available in Warren Hall.

NOTE: This and other information about grants available to graduate students can be found on the [Office of Graduate Studies](#) website at: <http://www20.csueastbay.edu/academic/colleges-and-departments/apgs/office-graduate-studies/graduate-opportunities-and-financial-resources.html>

External Grants and Granting Agencies

The following is a short list of granting agencies that offer granting opportunities for students pursuing a Master's Degree:

Association for Women in Science: *Educational Foundation Research Award*

<http://www.awis.org/>

Amount: Max \$1,000

Specifics: Female graduate student

Deadline: January

National Science Foundation: *Graduate Research Fellowship Program*

<http://www.nsf.gov/pubs/2006/nsf06592/nsf06592.htm>

Amount: 3 yr support; max \$30,000 per 12 months

Specifics: Support for research-based degrees in science, technology engineering

and mathematics

Deadline: November (specific dates vary by field of study)

Sigma Xi: *Sigma Xi Grants-in-Aid of Research*

<http://www.sigmaxi.org/programs/giar/index.shtml>

Amount: Max \$1,000

Specifics: 75% of funds restricted to students who are Sigma Xi members or whose advisors are members

Deadline: October 15th, March 15th

American Association of University Women: *Selected Professions Science and Technology Fellowships*

<http://www.act.org/aauw/spfscience/index.html>

Amount: \$5,000-12,000 for stipend and fees

Specifics: For women in final year of dissertation

Deadline: November 15th

NOTE: To find out if your grants and fellowships taxable, check out:

<http://www.irs.gov/businesses/small/international/article/0,,id=106193,00.html>

Student Loans

Contact the Financial Aids Office regarding other assistance from the University Work-Study Program, loans, scholarships, etc.

Forgivable Loan/Doctoral Incentive Program

Through this program, students may borrow up to \$10,000 per year (up to a total of \$30,000 within a five-year period). Students who complete their doctoral studies and teach in the CSU system as full-time faculty members will have their loan forgiven at the rate of twenty percent for each year of teaching; those who do not obtain a CSU faculty position are required to repay the loan at an interest rate comparable to other graduate student loans. The program is designed to increase the diversity of persons qualified to fill instructional faculty position in the CSU. Employment at a CSU campus, however is not guaranteed. Applicants are not required to be accepted into a doctoral program at the time of applying. Applications are available in Warren Hall, Room 859. More information concerning grant, loan and scholarship programs may be found in the Office of Financial Aid, located in Warren Hall.

Website address: <http://esweb.csueastbay.edu/Polaris/Default.aspx?tabid=47>

APPENDICES

APPENDIX 1 – Biology Faculty And Their Research Interests

FACULTY MEMBER	OFFICE LOCATION, PHONE NUMBER, WEBSITE	SPECIALTIES AND INTERESTS
Dr. Christoph W. Baysdorfer <i>Biotech Advisor</i>	SC N402, 510-885-3459 http://www.sci.csu Hayward.edu/biology/faculty/bios/baysdorfer.html	Cell Biology, Plant Physiology
Dr. Ken Curr	SC N418 510-995-2629 http://www20.csueastbay.edu/directory/profiles/biol/currkenneth.html	Virology
Dr. Tyler Evans	SC S 350 510-885-3475 http://www20.csueastbay.edu/directory/profiles/biol/evanstyler.html	Physiological Ecology, Global Change Biology
Dr. Donald A. Gailey <i>Departmental Chair</i>	SC N113 510-885-4763 http://www.sci.csu Hayward.edu/biology/faculty/bios/gailey.html	General & Molecular Genetics
Dr. Maria Gallegos <i>Graduate Coordinator</i>	SC S351 510-885-2856 http://www20.csueastbay.edu/directory/profiles/biol/gallegosmaria.html	Genetics, Developmental Biology
Dr. Caron Inouye	SC S425, 510-885-4479 http://www.sci.csu Hayward.edu/biology/faculty/bios/inouye.html	Animal Physiology, Ornithology, Physiological Ecology
Dr. Christopher L. Kitting	SC N302, 510-885-3001 http://www.sci.csu Hayward.edu/biology/faculty/bios/kitting.html	Evolutionary Biology, Marine Biology, Wetlands Ecology
Dr. Carol Lauzon <i>Med Tech Advisor</i>	SC N41, 510-885-2367 http://www.sci.csu Hayward.edu/biology/faculty/bios/lauzon.html	Microbiology, Environmental Microbiology
Dr. James Murray	SC S303, 510-885-2367 http://www20.csueastbay.edu/directory/profiles/biol/murrayjames.html	Neurobiology, Physiology

FACULTY MEMBER	OFFICE LOCATION, PHONE NUMBER, WEBSITE	SPECIALTIES AND INTERESTS
Dr. Brian Perry	SC S351, 510-885-3441	Evolutionary Ecology, Systematics, Mycology
Dr. Maria C. Nieto	SC N351, 510-885-4757 http://www.sci.csu Hayward.edu/biology/faculty/bios/nieto.html	Immunology, Cell Biology
Dr. Claudia Uhde-Stone	SC N403, 510-885-2860 http://www.sci.csu Hayward.edu/biology/faculty/bios/uhde-stone.html	Plant Biology, Cell and Molecular Biology
Dr. Erica Wildy	SC S325, 510-885-4387 http://www.sci.csu Hayward.edu/biology/faculty/bios/wildy.html	Behavioral Ecology, Herpetology, Biology Education, Informal Science Education