

Academic Year
2017/2018

Graduate Student Handbook

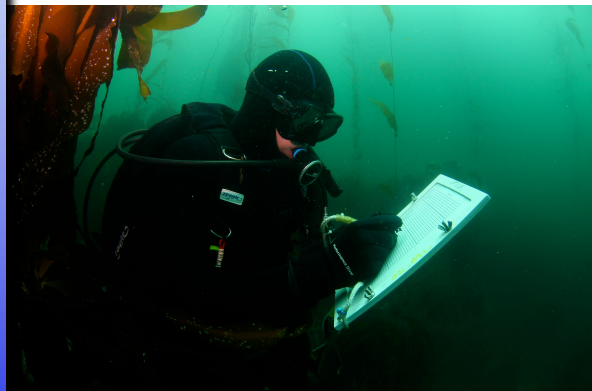


Table of Contents

THE MLML GRADUATE PROGRAM.....	1
MLML Mission.....	1
Participating Faculty	2
<i>Director.....</i>	2
<i>Tenured/Tenure Track Faculty.....</i>	2
<i>Research Faculty</i>	2
<i>Emeritus Faculty.....</i>	3
GRADUATE PROGRAM REQUIREMENTS	4
Vision	4
Program Administration.....	4
Admission to the MLML Graduate Program.....	4
Orientation	4
Degree Requirements	4
<i>Minimum grade requirements.....</i>	5
Normal Course Load.....	5
Grading.....	5
Maximum Time to Degree	6
Advisory Meeting	6
Classification Status	6
Thesis Committee	7
Thesis Proposal Format.....	8
Research Permits and Animal Care and Use Committee (IACUC) Approval	8
Use of Animals: Animal Welfare Policy and Definitions.....	9
Thesis Proposal Submission.....	10
Thesis Proposal Meeting.....	10
<i>English Competency Writing Requirement.....</i>	10
Advancement to Candidacy	11
Thesis Review and Final Submission	11
Scheduling the Thesis Defense	11
Practice Seminar Presentation.....	12
Thesis Defense Verification.....	12
DEGREE CHECKLISTS.....	13
New Student First Semester Checklist.....	13
Classification Checklist.....	13
Advancement to Candidacy Checklist.....	14
Graduation Checklist.....	14
Year One	17
Year Two.....	17
Year Three.....	18
<i>Overview</i>	19
MLML MS PROGRAM POLICIES	20
International Students	20
Transfer Credit and Waivers	20
Normal Course Load and Full-Time Enrollment.....	20
Continuous Enrollment	20
Completion of Previous Degree.....	21
Enrolling in MS 180 Independent Study.....	21
Enrolling in MS 298 Research in Marine Science	21

Enrolling in MS 299 Thesis	21
Leave of Absence (LOA)	21
Graduate Assistant Policy	22
Graduate Assistant Eligibility	23
Evaluation Of Graduate Assistant Effectiveness	23
Probation	23
<i>Dismissal resulting from MLML graduate program administrative probation</i>	24
<i>Dismissal from the home campus</i>	24
Conflict Of Interest	25
Sexual Harrassment.....	25
Alcohol Use.....	26
Information Resources Authorized User Access	26
Information Resources Copyright And Fair Use	26
MLML STUDENT & ADVISOR RESPONSIBILITIES	28
Graduate Student.....	28
Faculty Advisor.....	28
Who's Who @ MLML	29
Director	29
Department Chair	29
Graduate Program Coordinator.....	29
Front Office Administration.....	30
Information Technology (It) Department	30
Facilities Department	30
Environmental Health And Safety Department	30
Graphic Design Department.....	31
Curriculum Committee	31
Mlml Student Body Officers.....	31
WHO TO GO TO FOR HELP	33
Student Support Services	33
Personal Growth and Counseling Services	34
MLML RESEARCH RESOURCES	35
Scientific Diving Program	35
Small Boats Operation Program	35
Vehicle Usage	35
MLML/MBARI Research Library.....	37
MLML Museum.....	37
Friends Of Moss Landing Marine Laboratories.....	38
Additional Facilities	38
Affiliated Programs and Organizations.....	38
STUDENT ADMINISTRATION	39
Financial Support	39
Email Accounts	39
Enrolling In Classes	39
Textbooks.....	39
Keys and Keycards.....	39
Photocopying	40
Mailboxes.....	40
Mail Postage.....	40
Office Supplies.....	40

Financial Aid	40
Payroll Information	40
<i>State Student Assistant Time Sheets & Paychecks</i>	41
<i>State Graduate Assistant Time Sheets & Paychecks</i>	41
<i>Foundation Student Assistant Time Sheets & Paychecks</i>	41
<i>MLML Scholarship Recipient Paychecks</i>	41
Taxable Scholarships and Fellowships	41
Housing	42
Health Care and Insurance	42
MLML COURSES	43
Undergraduate Level Courses	43
Graduate Level Courses	45

THE MLML GRADUATE PROGRAM

MLML Mission

Moss Landing Marine Laboratories (MLML) serves the diverse student populations of seven California State University (CSU) campuses by providing a rigorous and competitive graduate program that culminates in the awarding of the Master of Science degree. MLML's mission is to: "Provision the Pioneers of the Future in Marine Sciences." We do this through a hands-on, laboratory and field-oriented approach to our curriculum, which places our students at the frontiers of marine science where discoveries are being made. MLML faculty and associated researchers are leaders in their fields, and guide student research while making significant contributions within disciplines ranging from geological oceanography to marine mammal ecology. While also teaching classes, MLML faculty provides a cutting-edge education for students; our emphasis on mentoring and teaching, integrated with independent research, is the key to our students' success. Through our curriculum and research-based graduate degree program we prepare students for careers in science, education and outreach, conservation, policy and management, as well as the pursuit of doctoral degrees related to the marine sciences.

Students obtaining an M.S. degree from MLML have achieved the following outcomes:

- Students demonstrate an increased depth of understanding of selected topics in marine sciences both broad and specific to their specialty or field of study, such as physical oceanography, biological oceanography, chemical oceanography, geological oceanography, marine phycology, marine ichthyology, marine turtle, bird and mammal ecology, and marine invertebrate zoology.
- Students demonstrate the ability to critically analyze scientific research conducted by themselves and by others.
- Students demonstrate the ability to pose relevant scientific hypotheses and questions that may then serve to guide their thesis research within their chosen field of study.
- Students demonstrate proficiency in the design and implementation of experiments and data collection methodologies to address specific hypotheses or questions as applicable to their field of study.
- Students demonstrate a mastery of tools and instrumentation for data collection and analysis (including analytical and statistical techniques as appropriate) specific to their field of study.
- Students demonstrate the ability to place their work within the larger context of their field of study and to clearly identify the implications of their research for that field.
- Students demonstrate proficiency in oral and written communication by being able to present research clearly and concisely. This includes thoughtful and thorough oral and written presentation of their thesis and their responses to questions. These skills are demonstrated routinely in the classroom and during the culminating experience of their degree program – a successful oral defense, open to the public, of their thesis project.

Participating Faculty

Director

James Harvey, Director / Ph.D., 1987, Oregon State University
Research interests: ecology of marine turtles, birds, and mammals

Tenured/Tenure Track Faculty

Ivano Aiello, Professor / Ph.D., 1997, University of Bologna, Italy.
Research interests: sedimentology (pelagic and hemipelagic sediments), stratigraphy, paleomagnetism, field geology, structural geology

Kenneth H. Coale, Professor / Ph.D., 1988, University of California, Santa Cruz.
Research interests: Global biogeochemistry, trace metals, radionuclides, chemical oceanography

Thomas P. Connolly, Assistant Professor / Ph.D., 2012, University of Washington.
Research interests: Dynamics and ecological impacts of physical processes in the coastal ocean.

Jonathan B. Geller, Chair/Professor / Ph.D., 1988, University of California, Berkeley.
Research interests: invertebrate zoology, molecular marine ecology, evolutionary biology

Michael Graham, Professor / Ph.D., 2000, Scripps Institution of Oceanography.
Research interests: aquaculture, phycology, marine ecology, statistics and experimental design

Scott Hamilton, Assistant Professor / Ph.D., 2007, University of California, Santa Barbara.
Research interests: ecology of marine fishes, community ecology, fisheries and conservation, population connectivity, kelp forests, coral reefs

Birgitte McDonald, Assistant Professor / Ph.D., 2009, University of California, Santa Cruz.
Research interests: physiological and behavioral ecology of marine vertebrates

Katie Lage, Librarian / M.L.S., 2002, San José State University.
Research interests: library and information science, organization of and access to digital cartographic materials, data collections and research data curation, access, and re-use

Nicholas Welschmeyer, Professor / Ph.D., 1982, University of Washington.
Research interests: biological oceanography, phytoplankton zooplankton relations, algal pigment

Research Faculty

Colleen Durkin, Research Faculty / Ph.D., 2012, University of Washington.
Research interests: Particle export from the surface ocean, phytoplankton physiology, molecular mechanisms of biomineralization, evolution of phytoplankton physiological responses, environmental genetics, particle and cell imaging methods.

David Ebert, Research Faculty / Ph.D., 1990, Rhodes University, South Africa.
Research interests: ecomorphology, habitat utilization, biogeography, systematics of chondrichthyan fishes

Stacy Kim, Research Faculty / Ph.D., 1996, Woods Hole Oceanographic Institution.
Research interests: benthic ecology of invertebrates, anthropogenic influences in marine communities, flow effects on larval dispersal

Valerie Loeb, Research Faculty / Ph.D., 1979, Scripps Institution of Oceanography.
Research interests: ichthyoplankton, marine fisheries

John Oliver, Research Faculty / Ph.D., 1980, Scripps Institution of Oceanography.
Research interests: marine ecology, benthos, pollution, habitat restoration

Iliana Ruiz-Cooley, Research Faculty / Ph.D., 2009, New Mexico State University
Research interests: Feeding ecology, habitat use, migration of species, ecological response of marine predators to climate change

Jason Smith, Research Faculty
Research interests: physiological ecology of marine algae, marine algal technologies, molecular biology, optical remote sensing technology

Richard Starr, Research Faculty / Ph.D., 2002, Universidad Autónoma de Baja California Sur.
Research interests: conservation biology, fisheries, telemetry, resource management

Diana Steller, Diving Safety Officer / Ph.D., 2003. University of California Santa Cruz.
Research interests: subtidal ecology, algal ecology, plant-animal interactions

Alison Stimpert, Research Faculty / Ph.D., 2010, University of Hawai‘i at Mānoa.
Research interests: bioacoustics, behavioral ecology, conservation biology

Emeritus Faculty

William Broenkow, Professor Emeritus / Ph.D., 1969, University of Washington.
Research interests: physical oceanography

Gregor Cailliet, Professor Emeritus / Ph.D., 1972, University of California, Santa Barbara.
Research interests: ecology of marine fishes, deep sea ecology, marine fisheries

Michael S. Foster, Professor Emeritus / Ph.D., 1971, University of California, Santa Barbara.
Research interests: phycology, ecology, rocky intertidal, kelp forests, rhodoliths

H. Gary Greene, Professor Emeritus / Ph.D., 1977, Stanford University.
Research interests: marine geology, benthic habitats, submarine canyons and landslides, tsunamis, coastal processes

GRADUATE PROGRAM REQUIREMENTS

Vision

The vision of the MLML graduate program is to provide a collegial and nurturing environment conducive to the creative and intellectual development of world-class scientists. Faculty who are experts in the areas of physical oceanography, biological oceanography, chemical oceanography, geological oceanography, marine phycology, marine ichthyology, marine turtle, bird and mammal ecology, and marine invertebrate zoology conduct the graduate program and are supported by talented professional staff.

Program Administration

The interdisciplinary MLML Master of Science in Marine Science degree program is administered by MLML and seven California State University campuses: East Bay, Fresno, Monterey Bay, Sacramento, San Francisco, San Jose and Stanislaus. MLML provides and administers the educational and research support that is the graduate program, and the consortium campuses host the program and award the degree. All MLML graduate students are enrolled through one of the seven consortium campuses. MLML program requirements are the same regardless of the student's home campus; however, admission, graduation and department requirements may vary from campus to campus. Prospective students may contact the MLML Graduate Program Coordinator for information on how the policies differ among the consortium campuses.

Admission to the MLML Graduate Program

Students accepted into the MLML graduate program should have a well-rounded background in science, mathematics and research. Admitted students generally have a GPA of 3.2 or greater, GRE scores in the upper 30th percentile, and experience in marine studies. Newly admitted students must meet the entrance requirements of the home campus and MLML. All graduate students enter the program as Conditionally Classified (See Classification Status).

Orientation

All new students are required to attend the MLML in-house orientation before the first day of instruction. Orientation may include program overview, staff and faculty introductions, environmental health and safety training, library introduction, information technology information and facilities tours. During this time students will receive MLML student ID cards, complete all employee appointment paperwork, and register for direct deposit if they are to be employed as a Graduate Assistant. Students are encouraged to contact their home campus to inquire about any additional orientations held at their home campuses.

Degree Requirements

Master's students must successfully complete 30 units of coursework with a grade of "B" or better in each course, and a written thesis research project and oral thesis defense to qualify for the M.S. in Marine Science degree.

Degree requirements for the M.S. in Marine Science degree are:

- Complete 3 of the following 5 core courses: MS 103, MS 141, MS 142, MS 143 and MS 144. Core courses may be waived with acceptable grades in prior coursework and instructor and advisor approval. All students shall complete core courses by the end of the third semester to be considered for Classification and make satisfactory progress through the program.
- Complete a minimum of 15 upper-division units (200-level), including MS 285 Graduate Seminar (4 unit maximum) and 4 units of MS 299 Thesis. The majority of the coursework must be upper-division (200-level) courses.
 - MS 105 Marine Science Diving cannot be used toward the 30-unit degree requirement.
 - A maximum of 2 units of MS 298 may be used toward the 30-unit degree requirement. Students may enroll in more units of MS 298 while they are conducting thesis research or to maintain continuous enrollment at the home campus, however. An advisor may require that a student enroll in MS 298, and the advisor may determine the number of units in which a student must enroll.
 - A maximum of 2 units of MS 180 may be used toward the 30-unit degree requirement.
- Complete a thesis approved by the thesis committee. The thesis must conform to the rules set forth by the home campus graduate studies office and meet the academic standards of the graduate program at MLML.
- Complete an oral thesis defense in the form of a seminar open to the general public. The thesis committee must be present to effectively evaluate the success of the presentation.

Minimum grade requirements

If a student receives a grade lower than a “B” in a core course intended to be used toward Classification, then the student must either retake the core course or take another core course to meet the requirement. If a student receives a grade lower than a “B” in an elective course to be used toward the 30-unit requirement, then the student must either retake the course or take another elective course to meet the requirement.

The student is responsible for knowing and abiding by home campus policies regarding minimum grade requirements.

Normal Course Load

MLML graduate students are expected to work full-time toward their degrees and maintain enrollment every semester until they are awarded their degree. All courses meet one day per week. MLML courses are intensive and designed to meet graduate student interests. The 4-unit courses generally have the lecture component in the morning and lab in the afternoon. Special topic seminars and other courses are offered at fewer units and may only meet half-day. A normal course load is 2 or 3 courses per semester, but each student must get approval of his/her course schedule from his/her advisor.

Grading

Coursework is academically assessed according to the plus and minus letter grading system (A+, A, A-, etc) with the exception of students enrolled through CSU Fresno. Fresno students are academically assessed according to the standardized letter grading system (A, B, C, etc.). MS 299 Thesis is the only course offered at MLML that will be assessed on a Credit/No-Credit basis (CR/NC). All students, regardless of home campus affiliation, must receive a letter grade of “B” or better in the courses used toward their degree requirements and maintain satisfactory academic status in the MLML graduate program. All students, regardless of home campus affiliation, must receive a “Credit” grade in MS 299.

All letter grades received in attempted courses will appear on transcripts and count toward a student's cumulative GPA. All letter grades received in courses used to meet the 30-unit degree requirement will count toward the student's Major Grade Point Average (GPA).

Designations of Credit/No-Credit (CR/NC), Incomplete (I), Withdrawal (W) and Report in Progress (RP) shall not be calculated in the grade point average. All "I" grades must be changed to a letter grade within one year or the grade will default to an "F".

An "RP" grade shall be used in connection with MS 299 Thesis, in which assigned work frequently extends beyond a single academic term. The "RP" shall be replaced with a "CR" when the thesis is submitted to the home campus for binding. All "RP" grades must be changed to a "CR/NC" grade within 2 years or the grade will default to a "NC".

Students seeking to challenge final grade assessments shall follow the policy and procedures of their home campus and in consultation with the MLML Graduate Program Coordinator.

Maximum Time to Degree

Maximum time to degree is defined as the amount of elapsed calendar time within which a MLML graduate student must complete his/her M.S. degree requirements. Maximum time to degree for the M.S. in Marine Science degree within the consortium campuses is 7 years, with the exception of CSU Fresno and CSU East Bay, which require students to complete degree requirements within 5 years. MLML strongly encourages graduate students to pursue completion of their degree within 3 years.

A student who fails to complete the degree requirements within the maximum time allowed must take appropriate measures with his/her home campus to compensate for the outdated coursework. Some campuses request a letter from an MLML administrator to authorize acceptance of the expired coursework, while others require the coursework to be repeated for credit. It is the student's responsibility to ensure that his/her degree requirements are completed within his/her home campus' timeframe. Students should check with their home campus for current policy regulations.

Advisory Meeting

Newly admitted students shall meet with their faculty advisor prior to the start of their first semester in the graduate program to evaluate the student's strengths and deficiencies, recommend or assign remedial and/or other appropriate courses, discuss waiving courses or transferring credit, and provide the student with workspace. The outcome of this meeting will result in an approved graduate coursework plan, known as the Graduate Program Planning Sheet, for the student to follow during his/her tenure at MLML. The Graduate Program Planning Sheet shall be signed by the faculty advisor and submitted to the MLML Graduate Program Coordinator within one week after the student begins his/her first semester.

Classification Status

Students admitted into the MLML graduate program are considered Conditionally Classified students. Conditionally Classified students must satisfactorily complete MLML and home campus classification requirements before they are officially Classified students in the MLML graduate program. **A student should file for classification by the end of his/her third semester.** It is the student's responsibility to notify the MLML Graduate Program Assistant when he/she is eligible for classification. A student is Classified once he/she:

- Obtains an MLML tenured or tenure-track faculty advisor. Students newly admitted into the MLML graduate program are assigned an advisor (generally the advisor indicated on the student's admission application) who may or may not be the final thesis advisor.

- Makes up any coursework deficiencies for MLML and the home campus department (see home campus regulations).

Completes or waives 3 of the following 5 courses with a grade of “B” or better:

- MS 103 Marine Ecology
- MS 141 Geological Oceanography
- MS 142 Physical Oceanography
- MS 143 Chemical Oceanography
- MS 144 Biological Oceanography

If a student wishes to waive or transfer in any coursework, he/she is strongly advised to submit waiver and transfer forms for courses to the Graduate Program Coordinator during their first semester.

Transfer/waiver forms must be received before the Graduate Program Coordinator can file forms required for the student to become fully classified.

The Graduate Program Coordinator will complete necessary forms and notify the student’s home campus after confirming that the student has completed the requirements for classification.

Thesis Committee

A student, in consultation with his/her MLML faculty advisor, shall assemble a thesis committee no later than his/her third semester in the program. The student and faculty advisor shall formulate the thesis committee before the student submits the final draft of the thesis proposal to his/her advisor. The student shall notify the MLML Graduate Program Coordinator once he/she has confirmed thesis committee membership and in the event that changes are made to the thesis committee.

The composition of the thesis committee shall consist of at least 3 members:

1. Thesis Committee Chair

The Thesis Committee Chair shall be a MLML tenured, or tenure-track, faculty member who has previously served on a thesis committee. If the student’s primary advisor is a research faculty member, the student shall choose a chair from among the tenured or tenure-track faculty members to satisfy home campus requirements. The research faculty advisor can serve as the Outside Member in this technical capacity.

2. MLML Faculty/Home Campus Representative

The second member of the committee shall be a MLML tenured or tenure-track faculty member, or home campus department representative (if required, e.g. Stanislaus).

3. Outside Member

The outside member shall be a MLML tenured/tenure-track faculty, MLML emeritus faculty, MLML research faculty, MLML lecturer, CSU tenured/tenure-track faculty, or independent researcher who has the equivalent standing of a tenured/tenure-track faculty member in the CSU system.

An Outside Member’s credentials will be reviewed by the student’s MLML faculty advisor and home campus department if this individual is someone other than a MLML tenured/tenure-track member, current MLML research faculty member in-residence (see Participating Faculty) or an individual who has never served on a MLML student’s thesis committee. Under these circumstances, the student shall submit the Outside Member’s Curriculum Vitae (CV) to the student’s home campus department for committee membership approval.

Some students may wish to incorporate a fourth member to their committee. The fourth member must meet the same requirements as the Outside Member. This member's CV will need to be reviewed and approved by the home campus and MLML faculty advisor if this member is someone other than a MLML tenured/tenure-track or research faculty member. Some students may require a fourth committee member if their advisor is a MLML research faculty or emeritus faculty member.

The committee's responsibility is to provide candid and timely advice to both the student and advisor with the goal of facilitating progress toward an acceptable thesis, as well as a timely progression toward degree completion. The committee should decide whether the thesis project describes goals adequate for the awarding of a master's degree. The committee should consider at each meeting: the project's strengths and weaknesses, whether the timeline for completion of the project is reasonable, the student's familiarity with relevant literature, the student's experimental and technical strengths and weaknesses, and the adequacy of advice provided to the student by the faculty advisor and others. The committee should provide constructive advice to the student in what can be a very difficult undertaking.

Thesis Proposal Format

Each MLML faculty advisor has his/her own thesis proposal formatting guidelines that are tailored to the research needs of his/her laboratories. Proposals are generally 15 pages in length with a title page, abstract, background information, hypothesis, methodology, project justification, literature cited, budget and any anticipated sources of funding, and the project timeline. A student should check with his/her advisor for formatting guidelines and proposal samples. All students shall contact their home campus library and graduate studies office for formatting instructions and submission guidelines.

Research Permits and Animal Care and Use Committee (IACUC) Approval

No student shall begin research until the necessary permits and IACUC approval are in place. If any research is conducted in the absence of the appropriate approval, use of the data set for thesis or publication can be denied, and if an entire thesis is conducted in the absence of an approved IACUC protocol, a student's home campus will deny graduation. In no case will the IACUC retroactively approve research undertaken without appropriate IACUC review and approval.

Once a student and faculty advisor have agreed on the student's thesis research, they should meet to determine which permits are necessary, and the student should immediately begin the application process for these permits. This process can be lengthy, and delay a student's research if not begun in a timely fashion.

If research involves animals (including observational studies, animal tissue only, and samples or data collected by someone else) a student needs prior approval to conduct the research. All animal research at MLML is evaluated, approved and monitored by the San Jose State University Animal Care and Use Committee (www.sjsu.edu/gradstudies/iacuc/). In addition, students' home campus IACUC will have their own requirements for conducting such research. It is essential that you have approval (in either an approved SJSU protocol or acceptance of an approved protocol from SJSU by your home campus) *prior to beginning work*. SJSU graduate students shall submit their own IACUC protocol designating them as co-PI with their MLML faculty advisor. Please note, SFSU does not recognize SJSU IACUC approval. SFSU students will need to complete SFSU's online animal training course and submit a separate protocol to SFSU.

Research involving vertebrates, invertebrates, seaweeds, landforms, water samples, etc. may also require permits from State and Federal agencies such as California Department of Fish and Wildlife, US Fish and Wildlife, Monterey Bay National Marine Sanctuary, Elkhorn Slough National Estuarine Research Reserve, Moss Landing Harbor District, California State Parks, US Bureau of Land Management, or private land owners, depending on the study. It is the student's responsibility to determine which permits are necessary for his or her research, and to obtain them prior to beginning work.

Research involving human subjects must be approved by the home campus' Institutional Review Board.

Research involving radioactive materials, hazardous chemicals, and/or the generation of hazardous waste must be approved by the MLML Health and Safety Office.

A copy of any and all permits and approval letters must be submitted to the Graduate Program Coordinator with the approved thesis proposal. Permits and approval letters are required for Candidacy approval. Additional information is available on the MLML and IACUC websites.

Please also be aware that the Media Security Policy of the Animal Care Department at SJSU also restricts the use of photography and recording devices, including but not limited to posting pictures of your research online or on social media. An excerpt from that policy reads as follows.

"Careless or casual use of recorded images or recordings from animal use areas (or in the field) could unintentionally expose students, staff and faculty to unwanted attention and harassment or misrepresent the nature of such activities occurring at or by San Jose State University and its affiliates."

Other IACUC information is available on the MLML Intranet at: <https://intranet.mlml.calstate.edu/iacuc>

Use of Animals: Animal Welfare Policy and Definitions

Moss Landing Marine Laboratories recognizes San Jose State University's **Senate Policy S14-6** (www.sjsu.edu/senate/docs/s14-6.pdf) as its reference for the humane care and use of animals and for addressing ethical concerns in discussions, evaluations, and policy matters regarding the care and use of animals by all individuals at MLML.

When animals are used for academic activities at MLML, every effort will be made to ensure that our faculty, staff, and students understand the ethical and scientific obligations with respect to their care and use. This policy sets forth procedures, guidelines, and standards by which MLML shall ensure compliance and all respective government statutes and University and MLML expectations with regard to the care and use of laboratory animals.

Animal refers to any live or dead non-human vertebrate species that is acquired, utilized or held for intended use in an academic activity, which includes the utilization of animal blood or tissues. Non-living animal tissues covered by this policy include, but are not limited to hair, bone, feathers, scales, teeth, excrement, boluses or secretions.

Operationally, this policy pertains to the care and use of vertebrate animals. In addition, MLML affirms that the purview of this policy may extend to the use of select invertebrate species as described in section 6.5 of the policy.

Section 6.5: Activities Involving Invertebrate Species. The IACUC requires review and approval of activities that involve the holding and care of **Cephalopods** at an IACUC approved facility for greater than 12 hours and other multi-cellular invertebrate species if: 1) the species is listed as endangered, threatened or of special concern at federal or local levels; 2) the species is considered poisonous, venomous, or a threat to public health; or 3) the project involves a non-native species that requires permission from a State or local authority to possess or handle, even if specimens are obtained commercially. An abbreviated protocol submission form is available for IACUC review and approval of activities involving invertebrate species.

Activity refers to any MLML supported project, whether it is publicly or privately funded, involving the use of animals for purposes of research, field study, experimentation, teaching, demonstration, training, testing, exhibition, artistic display, or related academic purpose.

Handling refers to the physical care, feeding, holding, petting, capture, dosing, sampling, disturbance, dispatch, breeding, baiting, release, transport, immobilization, dissection, treatment, training, or related interaction with an animal.

Facility refers to any and all buildings, laboratories, rooms, spaces, enclosures, land, vessels, or vehicles under the administrative control of SJSU and MLML or designated sites at off-campus locations used to support animal-related activities.

Personnel refers to any SJSU or MLML faculty member, research affiliate, employee, volunteer, staff, administrator, permit holder, contractor or student who is involved with the handling of an animal.

Protocol refers to the complete written description of an activity, including all permits, attachments, and amendments as approved by the Institutional Animal Care and Use Committee.

Thesis Proposal Submission

Students should use the “Thesis Proposal Review Form” when submitting a proposal to the faculty advisor and thesis committee. **A student is expected to have his/her thesis proposal approved by the faculty advisor by the end of the 3rd semester in the program.** The student shall distribute the proposal to his/her committee for official review after the faculty advisor has approved the final draft. A student is expected to submit his/her final proposal to the committee for initial review no later than his/her 4th semester in the program. The Thesis Committee will have four weeks to review the thesis proposal preceding the thesis proposal meeting. This four-week review period is meant to allow the committee sufficient time to effectively evaluate the proposal, and to ensure the proposal meets the academic standards of the program, department and home campus university. **A student is expected to have his/her thesis proposal approved by the thesis committee by the end of his/her 4th semester in the program.**

Thesis Proposal Meeting

A student shall schedule, in consultation with his/her committee, a thesis proposal meeting after the four-week thesis proposal review period. The informal meeting gives the student an opportunity to discuss the merit of his/her proposed research project with the committee members. In addition, the committee has the opportunity to discuss their outlook of the proposal, noted research deficiencies, scholarly merits, realistic timelines and financial projections. A student’s thesis proposal will need to be modified if the student is unsuccessful in convincing the committee on the merit of the proposed research project. If the committee determines the proposal does not meet the relevant academic standards, the committee must produce a written document, within one week of the meeting, which lists deficiencies and a timeline for correcting them. **A student is expected to have his/her thesis proposal approved by the thesis committee by the end of his/her 4th semester in the program.** Final acceptance of a thesis proposal is confirmed by submitting a signed Approval of Thesis Prospectus form to the MLML Graduate Program Coordinator.

All members of the committee shall attend the thesis proposal meeting; however, off-campus members may attend via teleconference during the scheduled time.

After the proposal is approved, it is the student’s responsibility to keep the committee informed of his/her research and degree progress.

English Competency Writing Requirement

All CSU consortium campuses require that graduate students demonstrate competency in written English before advancement to candidacy in a graduate program. MLML students satisfy this requirement by successfully completing a thesis proposal and having it approved by the thesis committee.

** Stanislaus students are required to enroll in 1 unit of MS 298 Research in Marine Science to fulfill this requirement.*

Advancement to Candidacy

A student may apply to Advance to Candidacy once the student has:

- Attained Classified status
- Completed an updated Graduate Program Planning Sheet with their faculty advisor
- Completed the majority of their coursework with the exception of:
 - MS 299 Thesis
 - No more than one course that the student plans to take, with the advisor's consent, in concurrence with MS 299 Thesis. (MS 298 does not count as this course, and may be taken in addition to MS 299 and one other course)
- Acquired thesis proposal approval from their committee, fulfilling the English Competency Writing Requirement
- Acquired research permitting approval (if applicable)

It is the student's responsibility to notify the MLML Graduate Program Coordinator as soon as he/she has completed these requirements. **A student shall file for advancement to candidacy no later than the end of his/her fifth semester in the program.** Students shall provide the Graduate Program Coordinator with the following items to initiate the advancement to candidacy process:

- An updated and signed Graduate Program Planning Sheet
- A signed Approval of Thesis Prospectus form (fulfills English Competency Writing Requirement)
- Electronic copies of all relevant permits and IACUC approval

The MLML Graduate Program Coordinator will submit the necessary paperwork to the home campus after the student has successfully met all advancement to candidacy requirements.

Thesis Review and Final Submission

It is the student's responsibility to determine home campus deadlines for filing theses, and plan so that the advisor and committee will have adequate time to thoroughly review various drafts, and the student will have time for thoughtful revision. The faculty advisor reviews the thesis first, and must approve it for submission to the rest of the committee. Committees commonly require 2-4 revisions before approving a thesis for defense and filing.

Students should use the "Thesis Review Form" when submitting a thesis to the faculty advisor and thesis committee.

A student must submit his/her thesis to the thesis committee for tentative approval at least 30 days before presenting a formal, public defense seminar. A student shall contact his/her thesis committee after 15 days of submission to ensure timely comments before the defense seminar. If the committee determines the thesis is inadequate, they will produce a written document listing the deficiencies to address within a given timeframe. A student may be dismissed from the program if the revised thesis does not gain the committee's approval. The MLML Chair and the student's home campus department will review all dismissals.

Students should inquire about thesis guidelines, policies, and deadlines with the MLML Graduate Program Coordinator well in advance of submitting the thesis.

Scheduling the Thesis Defense

MLML graduate students schedule the thesis defense during the semester in which they plan to graduate. A student must be Classified, Advanced to Candidacy and have committee approval to schedule his/her

defense. Once the student gains committee approval he/she may schedule the defense and reserve the seminar room by contacting the MLML Graduate Program Coordinator. The student must defend before the last day of the semester in which he/she intends to graduate and during a time when committee members can attend the seminar. Students should refer to the “Scheduling a Defense Checklist” for a complete list of steps that must be taken.

Students should inquire about thesis guidelines, policies and deadlines with the MLML Graduate Program Coordinator well in advance of the scheduled thesis defense. Practice presentations are strongly recommended in order to ensure a strong thesis presentation. These are usually coordinated with the thesis advisor and other lab members.

Practice Seminar Presentation

The student should schedule a practice talk with his/her lab at least one week before the defense. The student should present the completed presentation he/she plans to present to the public. The practice talk enables the student to receive optimal feedback and comments from his/her advisor and/or peers prior to the defense.

Thesis Defense Verification

The student’s thesis committee must be in agreement that the defense meets the academic standards of the program. The student’s thesis committee must sign the Verification of Culminating Experience form immediately after the defense has been presented to confirm satisfactory completion of the defense. It is at this time that the committee may sign the cover page of the student’s thesis. The signature page shall be on bonded paper identical to the paper used for the completed thesis.

The MLML Graduate Program Coordinator will submit the Verification of Culminating Experience form to the student’s home campus.

DEGREE CHECKLISTS

New Student First Semester Checklist

	Update personal/emergency contact information in MLML's Populi online system after receiving MLML email and Populi log in information from the MLML iTech staff.
	Schedule advisory meeting with faculty sponsor to review planned coursework, fill out an MLML Program Plan, and discuss any applicable course waivers/transfer units.
	Reserve space in desired MLML courses through Populi.
	Enroll at home campus after receiving reservation approval and permission codes from MLML Graduate Program Coordinator.
	Submit signed Graduate Program Plan form to MLML Graduate Coordinator by the end of the first week of instruction.
	Submit course waiver/transfer forms to MLML Graduate Program Coordinator, if applicable

Classification Checklist – No Later Than The End of 3rd Semester

	Select thesis advisor (tenured or tenure-track faculty)
	Complete any coursework deficiencies with MLML and/or home campus.
	Satisfactorily complete or waive 3 of the 5 core courses
	Confirm with Graduate Program Coordinator that change of Classification form has been submitted to home campus after requirements complete.

Advancement to Candidacy Checklist – No Later Than End of 5th Semester

	Establish Thesis Committee with faculty advisor and submit Thesis Proposal for faculty advisor approval by end of 3 rd semester.
	Submit Thesis Proposal for committee review and approval during 4 th semester
	Complete thesis proposal meeting by the end of 4 th semester.
	Submit signed Approval of Thesis Prospectus form and home campus form (if required) to MLML Graduate Program Coordinator by end of 4 th semester
	Submit updated Graduate Program Plan form to MLML Graduate Program Coordinator.
	Confirm with Graduate Program Coordinator that Advancement to Candidacy form has been submitted to home campus after requirements completed. Student should apply for Candidacy by 5 th semester.

Graduation Checklist

	Submit Graduation Application by home campus deadline (it is student's responsibility to determine home campus deadlines). Provide Graduate Program Coordinator with copy of application.
	Check MyCSU account for any holds that may prevent graduation.
	Check MyCSU unofficial transcript and Populi student schedule to confirm that all "I" and "RP" grades have been cleared. Speak with Graduate Program Coordinator if any are outstanding.
	Confirm Classification, Advancement to Candidacy and Graduation Application forms are on file with the MLML Graduate Program Coordinator and home campus.
	Enroll in 4 units of MS 299 Thesis during final semester.
	Contact the home campus Graduate Division and/or Library to confirm thesis review and submission deadlines, as well as the number of thesis copies to submit.
	Schedule Thesis Defense with MLML Graduate Program Coordinator after committee approval – see below checklist for detailed information.

	Check with home campus for thesis deadlines, formatting guidelines, and costs for binding.
	Gather committee signatures on bonded thesis cover sheet.
	Submit final thesis to home campus, home campus Library, and MLML Library.
	Notify MLML Graduate Coordinator when copies have been officially submitted to the home campus and MLML library.
	Submit completed MLML Student Exit Form to Graduate Program Coordinator by the last day of the semester.

Scheduling a Defense

	Submit thesis for final committee review 30 days prior to any proposed defense date
	<p>When considering defense dates and times, you must:</p> <ol style="list-style-type: none"> 1. Remember the deadlines stated above 2. Consult the Seminar Room calendar. You can navigate there from the MLML homepage when logged in by following: Intranet < Calendars and Reservation Forms < Seminar Room. Any date/time you pick must have at least a 2 1/2 hour block of time available; it must start 1 hour before and end 30 mins after the time you plan to defend. (i.e., if you want to start at 1 PM, your reservation should be from 12-2:30 PM) Please avoid days when another event is planned unless there is sufficient time for setup.
	<p>As you start to plan with your advisor and committee and have a strong contender for a date, you must:</p> <ol style="list-style-type: none"> 1. Notify the Graduate Program Coordinator via email 2. Put in a reservation on the Seminar Room calendar so your tentative date doesn't get snagged. BUT, you must state it as tentative in the Description/Reason field (i.e. "Tentative defense for Sammy Seal"). AND, if you end up not using this date, you must cancel your reservation
	<p>When your committee has agreed on a date, you must:</p> <ol style="list-style-type: none"> 1. Send the Graduate Program Coordinator an email to communicate the date/time. This email must show in some way that your advisor has approved - it can either be sent directly from your advisor with you cc'd, or you can forward a correspondence from your advisor confirming such. 2. After the Graduate Program Coordinator has replied with an "okay," make/confirm your seminar room reservation via the calendar or correspondence with the front desk

	After finalizing your defense date, respond to the library staff's email and work with them to make iTech arrangements for your presentation
	Speak with the Assistant to the Director if you wish to use areas in addition to the Seminar Room, such as the lobby or deck
	At least 10 days prior to the defense, (but after it has been approved by the Graduate Program Coordinator), create flyers for the defense and distribute them throughout the lab, and email all MLML with an invitation to attend the defense. This may also be completed by lab mates.
	At least one week prior to the defense, complete a practice talk <i>in</i> the Seminar Room. Consult with your faculty advisor, as some wish to be present for practice talks.
	Prior to the day of your defense, confirm that the presentation displays correctly on the Seminar Room setup, and that all equipment you wish to use is properly working (i.e. laser pointers, clickers, etc.). Make one last check for issues in your presentation, such as slides being cut off, difficulty in seeing particular colors, or problems with projection quality (flickering, poor resolution, etc.).

PROPOSED MASTER'S PROGRAM OUTLINE

to pursue completion of degree within 3 years

Year One

Fall (Semester One)

- ☐ Orientation
- ☐ Submit Graduate Program Planning Sheet with advisor signature
- ☐ Courses:
 - One of the following 4-unit courses:
 - MS 103 Marine Ecology
 - MS 142 Physical Oceanography

Semester units toward degree: 4 Total units toward degree: 4

Spring (Semester Two)

- ☐ Select advisor for thesis research
- ☐ Courses:
 - One of the following 4-unit courses:
 - MS 143 Chemical Oceanography
 - MS 144 Biological Oceanography
 - One 200-level graduate course geared toward your proposed research

Semester units toward degree: 8 Total units toward degree: 12

Year Two

Fall (Semester Three)

- ☐ Form thesis committee with consultation of advisor
- ☐ Submit permits and research authorization to appropriate home campus committees
- ☐ Courses:
 - One of the following 4-unit courses:
 - MS 103 Marine Ecology
 - MS 141 Geological Oceanography
 - MS 142 Physical Oceanography
 - One 200-level graduate course geared toward your proposed research

Semester units toward degree: 8 Total units toward degree: 20

- ☐ Confirm classification status change with MLML Graduate Program Coordinator
- ☐ Submit thesis proposal to faculty advisor for review and approval

Spring (Semester Four)

☐ Courses:

MS 285 Graduate Seminar (2 units)

One 200-level graduate course geared toward your proposed research

Semester units toward degree: 6 Total units toward degree: 26

☐ Submit final thesis proposal to committee for review and approval

☐ Schedule thesis proposal committee meeting

☐ Submit final thesis proposal and Thesis Proposal Approval Form to Graduate Program Coordinator

Year Three

Fall (Semester Five)

☐ Submit Advancement to Candidacy paperwork to MLML Graduate Program Coordinator

☐ Submit Proposal for Culminating Experience Form (SFSU only)

☐ Courses:

MS 298 Research in Marine Science (4 units)

Semester units toward degree: 4 Total units toward degree: 30

Spring (Semester Six)

☐ Courses:

MS 299 Thesis (4 units, REQUIRED)

Semester units toward degree: 4 Total units toward degree: 34

☐ Apply for graduation at home campus

☐ Submit thesis to committee for final review

☐ Schedule thesis defense

☐ Give public thesis defense

☐ Submit copy of thesis to home campus, home campus Library, and MLML Library

Total units toward degree: 34

Overview

Fall		Spring	
Semester 1	1a. Coursework 1b. Advisory meeting 1c. Graduate Program Planning Sheet 1d. Waive/transfer courses	Semester 2	2a. Coursework 2b. Select thesis advisor
Semester 3	3a. Coursework 3b. Submit thesis proposal to advisor 3c. Establish thesis committee 3d. Obtain necessary permits 3e. Obtain advisor approval of thesis proposal 3f. Submit Classification paperwork	Semester 4	4a. Coursework 4b. Final thesis proposal to committee 4c. Thesis proposal meeting 4d. Obtain committee approval of thesis proposal 4e. Submit Thesis Proposal Approval Form
Semester 5	5a. Coursework 5b. Submit Candidacy paperwork 5c. Submit Culminating Experience Form (SFSU only)	Semester 6	6a. Enroll in MS 299 Thesis 6b. Apply for Graduation 6c. Practice Oral Thesis Presentation 6d. Public Thesis Defense 6e. Submit Thesis to Home Campus

MLML PROGRAM POLICIES

A copy of all paperwork, forms and applications in connection with MLML and the student's home campus shall be submitted to the MLML Graduate Program Coordinator. The MLML Graduate Program Coordinator will forward all graduate forms to the appropriate home campus representative.

International Students

MLML international students will have additional out-of-state tuition costs during their tenure in the graduate program. MLML international students shall maintain continuous enrollment in the graduate program to meet non-immigrant student visa and MLML continuous enrollment requirements. International students may be asked to show verification of one year's worth of financial support (fees, tuition, cost of living expenses, etc.) to their home campus' international studies office. Please refer to the appropriate home campus international studies website for additional information.

Transfer Credit and Waivers

CSUMB and SJSU graduate students may transfer a maximum of 9 semester units and SFSU graduate students may transfer a maximum of 6 semester units to use toward their 30-unit requirement. Courses (undergraduate and graduate) used toward the award of the student's undergraduate degree or another graduate degree are ineligible for transfer credit. However, these courses may be used to waive a required core course (MS 103, 104, 141, 142, 143 or 144) with instructor and advisor approval. Non-MLML courses used toward the student's 30-unit requirement and MLML courses taken before the student was officially accepted to the MLML graduate program must have an accompanying waiver or transfer form on file with the MLML Graduate Program Coordinator and the student's home campus. A student interested in waiving or transferring courses shall submit the Petition to Waive/Transfer along with syllabi for each course to the MLML Graduate Program Coordinator. All course transfers and waivers are at the discretion of the faculty advisor and course instructor.

Normal Course Load and Full-Time Enrollment

MLML graduate students are expected to work full-time toward their degree in order to complete the program within 3 years. Students are required to maintain enrollment in the graduate program each semester until they are awarded their degree.

Continuous Enrollment

A student admitted to the MLML graduate program is required to enroll in an MLML course each fall and spring semester, from the time of entry into the graduate program until all degree requirements are met. Students applying for summer graduation should refer to their home campus regulations for summer enrollment requirements.

The Continuous Enrollment policy is designed to: 1) provide opportunities for continuous use of MLML facilities, 2) ensure adequate advisor supervision, 3) ensure proper monitoring of degree time limits and regulations, 4) eliminate the need for readmission to the university, 5) ensure the student is eligible for CSU Health Link health insurance and 6) maintain continued academic success in the graduate program.

A student who has completed his/her coursework and is working on a thesis must continue to maintain enrollment. Such a student will be advised to enroll in either MS 298 Research in Marine Science if he/she is working on the development of their thesis project or MS 299 Thesis if the student is in the final stages of writing the thesis (See MS 299 Thesis).

Unless granted an approved leave of absence, a graduate student who fails to register each semester shall be dismissed from the graduate program. If the student wishes to resume studies, it will be necessary to

reapply for admission to his/her CSU campus and the MLML graduate program and meet any additional requirements. Readmission to the program is not automatic and will be at the discretion of the home campus, MLML, and the student's faculty advisor.

Completion of Previous Degree

No student may enroll as a graduate student at MLML until a bachelor's degree has been completed. Newly accepted students currently completing another graduate degree are not permitted to enroll in the MLML graduate program until the previous degree has been completed or abandoned.

Enrolling in MS 180 Independent Study

Enrollment in MS 180 Independent Study requires a plan of study, approved by the instructor, faculty advisor and MLML Chair that is clearly independent of thesis research and includes a tangible product or outcome. No more than 2 units of MS 180 Independent Study may be used toward the 30-unit degree requirement.

Enrolling in MS 298 Research in Marine Science

MS 298 Research in Marine Science shall be taken during semesters in which a student is receiving advising, conducting general research, conducting thesis research, or when continuous enrollment purposes require such. MS 298 is not a course degree requirement with the exception of Stanislaus students. Stanislaus students must take at least 1 unit of MS 298 to meet the English Competency Writing Requirement. A student may apply a maximum of 2 units of MS 298 to meet the 30-unit degree requirement.

A student enrolling in MS 298 is responsible for meeting the course requirements established by the faculty advisor, and must attend a minimum of 5 MLML Thursday seminars. These requirements must be completed during the semester in which the student is enrolled in MS 298 to receive a grade in the course. The faculty advisor will issue an "I" grade if the student does not complete the course requirements by the end of the semester. An "I" grade in MS 298 shall be changed to an official grade within one year's time or it shall default to an "F". It is the student's responsibility to monitor and notify his/her faculty advisor and the MLML Graduate Program Coordinator when the grade is set to expire.

Enrolling in MS 299 Thesis

Students who have achieved Candidacy may be eligible to take MS 299, depending on their progress with their theses. Students may be eligible to enroll in MS 299 when they have completed thesis research and are in the thesis-writing stage. In order to take MS 299 a student must first discuss MS 299 with the faculty advisor for approval. If the advisor approves, the advisor should email the MLML Chair, copying the Graduate Program Coordinator, and confirm the student's readiness to take MS 299. Only once the Graduate Program Coordinator has approval from both the advisor and Chair will MS 299 be officially approved. Each student is required to enroll in 4 units of MS 299, and a maximum of 4 units of MS 299 may be used toward the 30-unit degree requirement.

The student's MLML faculty advisor will issue a "CR/NC" grade for MS 299 once the student submits the final thesis to his/her home campus for binding. The faculty advisor will issue an "RP" grade if the student has not completed the thesis by the end of the semester. An "RP" grade in MS 299 shall be changed to a "CR/NC" grade within 2 years time or it will default to a "NC" grade. It is the student's responsibility to monitor and notify his/her faculty advisor and the MLML Graduate Program Coordinator when the grade is set to expire.

Leave of Absence (LOA)

A Leave of Absence (LOA) permits a student to be absent from regular attendance for one or more semesters while maintaining continuous enrollment at MLML and the home CSU campus. A student must

have an intention to return to formal study within a specified period before being granted leave. A student may take a leave of up to 4 semesters.

The opportunity to apply for a leave is available to all students except those attending their first semester (or a first semester after an absence) and those students in disqualified status.

The request for an LOA must be made in advance of the semester during which the student will take leave; retroactive leaves will not be granted. A student requesting an LOA shall submit a letter of justification, a faculty advisor's letter of consent and appropriate home campus forms to the MLML Graduate Program Coordinator. Some CSU home campuses only allow an LOA related to educational objectives. Please consult the relevant home campus LOA policy.

The following applies to all leaves of absence:

- Any LOA (1 semester or longer) shall be authorized in advance through the MLML Chair, MLML Graduate Program Coordinator and the student's home campus.
- Approval for a LOA will be recommended to the student's home campus only under unusual or exceptional circumstances.
- Time spent on a leave may continue to count toward departmental and university time requirements, including, but not limited to, the 5 and 7 year limits on completion of graduate work at MLML. A student should inquire with the MLML Graduate Program Coordinator regarding their specific situation to determine if it will or will not count.
- If a LOA is granted, it is the responsibility of the student to be familiar with all relevant departmental and university regulations and to file any necessary paperwork both with the MLML Graduate Program Coordinator and his/her home campus.
- Foreign students have additional responsibilities and visa restrictions in respect to any LOA. Foreign students are required to notify their home campus International Programs office of their approved leave. These students should refer to home campus International Programs office for additional information.
- Readmission to the program after a leave is contingent upon a student's ability to meet conditions set by the MLML graduate program, faculty advisor, and the student's home campus.
- A student will not be allowed to use MLML or CSU home campus facilities while on leave.
- A student who does not have an approved thesis proposal on file is strongly discouraged from applying for an LOA.
- A student on LOA wishing to maintain health insurance coverage will need to contact his/her home campus' health insurance office.

Graduate Assistant Policy

A Graduate Assistant (GA) provides instructional support and may assist faculty or teaching staff with various professional and technical activities. GAs may be assigned instructional duties in support of a specific course, such as grading student work, creating teaching aids and course materials and meeting with students from the course for discussions or tutoring. GAs are not solely responsible for the instructional content of a course, selection of student assistants, planning examinations, or determining the final course grades of students, nor shall they be assigned responsibility of instructing the entire course, or for providing the entire instruction of a group of students enrolled in a course. All GAs work

under the close supervision of a faculty member, and the program employing them shall bear the financial burden of this supervision. According to the need for their services, GAs shall receive semester appointments anywhere from 1 to 20 hours per week.

Graduate Assistant Eligibility

A graduate student may be appointed as a GA if he/she has attained classified status and is currently enrolled in a minimum of 3 units (except for students in their final semester who may enroll in a minimum of 1 unit). A graduate student appointed as a GA shall have teaching experience or the academic competency to teach prior to working as a GA. GAs do not earn academic credit for their appointment.

Evaluation Of Graduate Assistant Effectiveness

Student evaluations of GA effectiveness are available each semester to GAs. The evaluations are offered at the request of the GA to all students enrolled in the given course and are strongly encouraged by MLML faculty, as they can help the GA recognize his/her teaching strengths and weaknesses. These evaluations are distributed in conjunction with instructor evaluations near the end of each semester and may only be reviewed by GAs after course grades have been submitted. These evaluations are kept on file with the Graduate Program Coordinator.

Probation

All graduate students are required to demonstrate professional conduct and maintain satisfactory academic progress toward their degree while in the MLML graduate program. A student who does not demonstrate professional conduct or maintain satisfactory progress, as determined by the MLML program policies, faculty advisor, Chair, Director or home campus will be placed on administrative probation. A student placed on administrative probation will be notified in writing. This probation letter will specify steps and deadlines to correct deficiencies, and circumstances that may lead to dismissal from the program. A student placed on probation must meet with his/her faculty advisor to develop a plan to address the deficiencies stated in the probation letter.

The following describes conditions in the MLML graduate degree program leading to administrative probation:

- A student who fails to receive a “B” grade or better in courses used toward the degree requirements
- A student who has not submitted an approved thesis proposal and Thesis Proposal Approval Form by the end of his/her fourth semester
- A student who has not completed the requirements to achieve classified standing by the end of the fourth semester
- A student who has not completed his/her coursework, with the exception of MS 299, by the end of the sixth semester
- A student who fails to comply with an academic requirement or regulation (i.e. thesis proposal symposium) that is routine for all students or for a defined group of students
- A student who fails to make satisfactory progress on his/her thesis or graduation as evaluated by the faculty advisor or Chair
- A student who demonstrates unprofessional conduct as determined by the faculty advisor, Chair or Director

Note: A student who has not had a thesis proposal approved by his/her faculty advisor by the end of the third semester will not be placed on probation, but will receive a warning letter that he/she will be placed on probation if the Thesis Proposal Approval Form and thesis proposal with full committee approval is not submitted by the end of the fourth semester.

If a graduate student enters the MLML graduate degree program under a modified program timeline as agreed on by the faculty advisor and student, probation deadlines may be modified. These deadlines should be defined on the student's program plan, and must be approved and submitted during the student's first semester in the program.

A student may petition probation by submitting a letter of explanation to the Graduate Program Coordinator. The petition will be reviewed by an ad hoc faculty committee consisting of at least three members, including the faculty advisor.

In addition to probation policies as defined above for the MLML graduate degree program, a student is also subject to the probation policies of his/her home campus and college. It is the student's responsibility to know and abide by these policies. These include but are not limited to:

- A student enrolled in the MLML graduate program beyond his/her home campus' maximum time to degree will be placed on academic probation by the home campus (see Maximum Time to Degree). The student must correspond with the home campus to determine deadlines for correcting deficiencies.
- A student who fails to meet his/her home campus academic or student standards will be placed on academic probation. The student must correspond with the home campus to determine deadlines for correcting deficiencies.

Program Dismissal

A student may be dismissed from the MLML graduate program for a variety of reasons including, but not restricted to:

- Being on probation for more than one semester
- Failing to enroll each fall and spring semester
- Failing to enroll following the end of an approved leave of absence
- Producing a thesis project that is judged by the thesis committee to be of insufficient merit
- Failing to meet MLML's or the home campus' thesis standards
- Demonstrating unprofessional conduct
- Behaving in a way that interferes with the learning of others

Dismissal resulting from MLML graduate program administrative probation

Any graduate student remaining on administrative probation for more than one semester may be dismissed from the program. A student may petition to remain in the program by completing a dismissal appeal petition and submitting it to the Graduate Program Coordinator. An *ad hoc* faculty committee of at least three members, including the faculty advisor, will consider such petitions and make a recommendation to the MLML Chair for final decision. Pending appeal, a student's home campus will be notified. If the appeal is approved, the student may remain in the program, but must meet all conditions set forth by the faculty advisor and MLML Chair. If these conditions are not met, the student will be dismissed from the program without possibility of further appeal.

Dismissal from the home campus

A student's home campus may dismiss a student; it is a student's responsibility to know the home campus dismissal policies and meet all home campus requirements to remain in the program. If a student is dismissed he/she may apply for reinstatement to the graduate program by completing the petition process as defined by the home campus.

Program Withdrawal

A student formally withdrawing from the program without the successful completion of a thesis must submit a written notification to his/her faculty advisor and the MLML Graduate Program Coordinator. In

the absence of such notification the student's record will read that he/she was dismissed from the program.

Conflict of Interest

The impartiality of MLML staff and faculty assures the academic integrity of the graduate program. Preventing conflicts of interest in the area of staff, faculty and student interaction is both a central ethical responsibility for all parties and a legal obligation. Beyond the minimum level of diligence required by law in this respect, there exists a higher standard toward which staff, faculty and student should strive. Staff, faculty and students should avoid actual conflicts of interest as well as the appearance of such conflicts whenever possible. All parties ought not to engage in relationships that are so personal that the presumption of impartiality is difficult to maintain. All parties shall acknowledge that such impartiality thrives best in an atmosphere free from suspicions of favoritism, nepotism, coercion and harassment. This ethical standard arises from all parties' full appreciation of the wide scope of thought and expression enjoyed under the protection of academic freedom.

All complaints dealing with conflict of interest should be directed to MLML's Assistant to the Director.

Harassment

MLML students, faculty and staff are expected to maintain an educational and working environment free from harassment. MLML follows CSU Executive Order 1097 (<http://www.calstate.edu/eo/EO-1097.html>) which includes the following definitions of harassment:

Harassment means unwelcome conduct engaged in because of a Protected Status that is sufficiently severe, persistent or pervasive that its effect, whether or not intended, could be considered by a reasonable person in the shoes of the Student, and is in fact considered by the Student, as limiting the Student's ability to participate in or benefit from the services, activities or opportunities offered by the University.

This policy covers unwelcome conduct of a sexual nature. While romantic and/or social relationships between members of the University community may begin as consensual, they may evolve into situations that lead to charges of Sexual Harassment or Sexual Violence, including Domestic Violence, Dating Violence and Stalking, subject to this policy.

Sexual Harassment, a form of Sex Discrimination, is unwelcome verbal, nonverbal or physical conduct of a sexual nature that includes, but is not limited to Sexual Violence, sexual advances, requests for sexual favors, and indecent exposure where:

- a. Submission to, or rejection of, the conduct is explicitly or implicitly used as the basis for any decision affecting a Student's academic status or progress, or access to benefits and services, honors, programs, or activities available at or through the University; or
- b. Such conduct is sufficiently severe, persistent, or pervasive that its effect, whether or not intended, could be considered by a reasonable person in the shoes of the Student, and is in fact considered by the Student, as intimidating, hostile or offensive.

Sexual Harassment also includes acts of verbal, non-verbal or physical aggression, intimidation or hostility based on gender or sex-stereotyping, even if those acts do not involve conduct of a sexual nature.

Sexual Violence is a form of Sexual Harassment and means physical sexual acts, such as unwelcome sexual touching, Sexual Assault, Sexual Battery, Rape, Domestic Violence, Dating Violence and Stalking (when based on gender or sex) perpetrated against an individual against his or her will and without consent or against an individual who is incapable of giving consent due to that individual's status as a minor, use of drugs or alcohol, or Disability¹. Sexual Violence may include physical force, violence, threat, or intimidation, ignoring the objections of the other person, causing the other person's intoxication or incapacitation through the use of drugs or

alcohol, or taking advantage of the other person's incapacitation (including voluntary intoxication).

Men and women can be victims of these forms of sexual assault. Unlawful sexual intercourse with a minor (statutory rape) occurs even if the intercourse is consensual when the victim is under 18 years old, because the victim is considered incapable of giving legal consent due to age.

Please see Executive Order 1097 for the entire harassment policy, and definitions of Sexual Violence.

Any student who has been the victim of harassment, or who knows or has reason to know of allegations or acts that violate the policy shall promptly inform an MLML administrator, or submit a complaint by form (see here: http://www.sjsu.edu/hr/students/students_harassment_complaints/).

Alcohol Use

MLML recognizes that the serving of alcoholic beverages is a legal and acceptable part of many social gatherings. Yet, the immoderate consumption of alcoholic beverages can impair an individual's judgment, motor skills, and may cause long-term health problems. MLML only approves alcohol consumption for events that have been approved to serve alcohol according to university policy. MLML holds all individuals and the participants of events responsible for their individual and collective behavior in all circumstances. No persons under the age of 21 are allowed to consume alcohol at MLML events under any circumstances.

Possession of open containers or consumption of alcoholic beverages is not permitted in the computer laboratory, machine shop, any spaces where chemicals, equipment, or machinery are located, nor in any research areas (including laboratories, aquarium room, media preparation, and analytical facilities) except in specific areas that have been designated and maintained as safe for storage and consumption of food.

MLML will take disciplinary action for abuse of alcoholic beverage privileges or misbehavior under the influence of alcohol. This policy does not supersede policies of the California State University or the MLML consortium campuses.

Information Resources Authorized User Access

Access to MLML's information technology resources is a privilege granted to faculty, staff and students in support of their studies, instruction, employment duties, CSU business, and/or other CSU-sanctioned activities. Access may also be granted to individuals outside of MLML for purposes consistent with the mission of MLML and the CSU.

With the exception of implicitly publicly accessible resources such as websites, access to MLML information technology resources may not be transferred or extended by members of the CSU community to outside individuals or groups without prior approval of faculty, staff or an administrator. Such access must be limited in nature and fall within the scope of the educational mission of the institution. The authorizing CSU official is expected to ensure that such access is not abused.

Gaining access to CSU information technology resources does not imply the right to use those resources. The CSU reserves the right to limit, restrict, remove or extend access to and privileges within, material posted on, or communications via its information technology resources, consistent with this policy, applicable law or as the result of CSU disciplinary processes, and irrespective of the originating access point.

It is expected that these resources will be used efficiently and responsibly in support of the mission of the CSU as set forth in this policy. All other use not consistent with this policy may be considered unauthorized use.

Information Resources Copyright And Fair Use

Federal copyright law applies to all forms of information, including electronic communications, and violations are prohibited under this policy. Infringements of copyright laws include, but are not limited to,

making unauthorized copies of any copyrighted material (including software, computer code, text, images, audio, and video), and displaying or distributing copyrighted materials over computer networks without the author's permission except as provided in limited form by copyright fair use restrictions. The "fair use" provision of the copyright law allows for limited reproduction and distribution of published works without permission for such purposes as criticism, news reporting, teaching (including multiple copies for classroom use), scholarship, or research. The University will not tolerate academic dishonesty (s98-1) or theft of intellectual property in any form.

MLML STUDENT & ADVISOR RESPONSIBILITIES

Graduate Student

Graduate students shall recognize that they carry the primary responsibility for their success. Each student should take full advantage of the knowledge and advice that his/her faculty advisor and thesis committee offer. A student shall make an effort to keep the lines of communication open to succeed in graduate school.

Graduate students at MLML are responsible for:

- Abiding by university and program requirements, policies and standards
- Understanding deadlines and regulations associated with the program
- Recognizing that thesis and research project topics must be within the scope of the appraised and approved graduate program guidelines
- Producing a thesis or research project that is the student's own work and that meets the University and Department standards for style and quality, reflecting a capacity for independent scholarship in the student's discipline
- Considering and responding to advice and criticisms provided by the advisor or members of the thesis committee
- Meeting or communicating regularly with the faculty advisor and thesis committee **no less than once per semester** to review progress
- Satisfying the specific performance requirements that were agreed upon at the time of acceptance to the graduate program
- Recognizing that progress will be evaluated every semester by the faculty advisor and reported to the MLML Graduate Program Coordinator, and in special cases to the MLML Chair and home campus

Faculty Advisor

Faculty advisors play a key role in the academic life of the students and in the functions of the MLML graduate program. A faculty advisor's responsibilities include approving the student's program of study, helping the student design a suitable thesis topic, reviewing the student's thesis proposal, and mentoring research practices and determining whether the thesis meets the academic standards of the MLML graduate program. When a graduate student enters the program, he/she selects a faculty advisor that will serve as the academic advisor until the student has selected a research concentration. Often times the initial advisor will serve as the student's official thesis advisor after he/she has selected an area of study for the thesis project.

Who's Who @ MLML

Director

The MLML Director is responsible for administering the academic and research programs of MLML, as well as coordinating faculty and student affairs. The MLML Director serves as the major liaison with community, state and federal agencies and consortium campuses; and, holds the role as the Executive Secretary of the MLML Governing Board. Some of the Director's responsibilities are to:

- Improve MLML's capacity to carry out its educational mission and accomplish its objectives with distinction
- Develop and administer best policies and practices for MLML
- Oversee fiscal responsibility of MLML's academic and administrative operations
- Evaluate and allocate program and laboratories resources
- Act as the institutional liaison among MLML consortium campuses, the CSU and other institutions
- Serve as MLML's representative in charge of reviewing policy regulations and waiving program regulations and exceptions
- Hear special concerns raised by the MLML community and recommend solutions

Department Chair

The MLML Chair is an academic and administrative officer for MLML and is accountable for all aspects of the execution and development of the graduate program and functions of MLML comparable to an academic department on the home campus. The MLML Chair works closely with the Graduate Program Coordinator in administering the academic affairs of graduate students, and serves as the spokesperson of the faculty. Some of the Chair's responsibilities are to:

- Determine the schedule of classes and assign instructors and graduate assistants
- Serve as the official graduate program representative of MLML to the consortium campuses
- Communicate relevant information from the consortium campuses to students and faculty members
- Serve as an advisor to the students and faculty
- Ensure students are receiving proper supervision and meeting requirements of the program
- Improve the department's capacity to carry out its educational mission and accomplish its objectives with distinction
- Serve as program representative in charge of reviewing program regulations and granting exceptions
- Evaluate teaching, research, and mentorship effectiveness of the faculty

Graduate Program Coordinator

The Graduate Program Coordinator serves as the administrator of the graduate program at MLML. The Graduate Program Coordinator is responsible for providing program assistance (academic administrative support, student recruitment, admission support, orientation, enrollment support, advising, funding research and programmatic development, etc.) to MLML students pursuing their M.S. degree in Marine Science. The Graduate Program Coordinator works closely with the students, faculty and research faculty to ensure all parties understand the policies and procedures published in the MLML Graduate Student Handbook. Some of the Graduate Program Coordinator's responsibilities are to:

- Serve as a liaison for MLML with the MLML consortium campuses
- Serve as a liaison for the graduate students with the MLML and consortium faculty
- Process, track, and keep student records, from applications to transcripts

- Ensure adherence to MLML and home campus graduate policies during the students' tenure at MLML
- Certify Classification, Advancement to Candidacy, and verification of degree requirements
- Identify graduate students who are not meeting the academic standards of MLML graduate program, in consultation with the Faculty Advisor and MLML Chair
- Oversee property management of Sandholdt Housing facility

Front Office Administration

The Front Office Administration provides financial and administrative assistance to the MLML community in matters pertaining to new employee hires, payroll, accounts payable, accounts receivable, expense reimbursements, travel advancements and grant administration. They also provide support in the areas of state vehicle reservation, property management, event scheduling, event notification and coordination, room reservations, mail postage and FedEx scheduling. They provide the following services to students at MLML:

- Process Graduate Assistant new hire appointments and payroll (Foundation & State employment)
- Process Student Assistant appointments and payroll (State employment only)
- Assist students with understanding purchasing instructions pertaining to grant expenditures
- Monitor accounts payable, accounts receivable and reconciliation
- Coordinate State vehicle check-in and check-out system
- Assist with generating MLML student IDs cards
- Coordinate room scheduling, reservations and special lab events
- Update main MLML website and event notices

Information Technology (IT) Department

IT provides the MLML faculty, staff, and students with the technology services and support they need to excel in their endeavors. The primary services they provide to students are:

- Helpdesk-based technical support
- Email and Populi accounts
- Campus network connectivity; wired and wireless
- Access to licensed software from our MLML server

Facilities Department

Facilities provide the MLML faculty, students and staff with the majority of the physical items that they need to be a part of MLML. The primary services they provide to students are:

- Construction and maintenance of all MLML buildings and equipment
- Access to keys and keycards
- Shop design and construction of items directly related to student research projects
- Online request to report damages/changes/problems on the building and environment
- Building security
- Vehicle and mechanical equipment for loan and full repair services
- Training and supervision of shop equipment use

Environmental Health And Safety Department

The Health and Safety Officer provides a range of material and administrative support for faculty, staff, and students. Direct support services include:

- Laboratory and chemical safety information for research and individual projects

- Advice and support on personal protective gear for laboratory and field operations
- Advice on chemical methods and laboratory techniques
- Acquisition, use, storage, labeling, and disposal of hazardous materials
- Use of ionizing radiation sources and x-ray sources and radiation safety
- Vehicle use and defensive driving training information
- Fire and emergency preparation and information
- Out-of-country travel and research information and preparation
- Worker's compensation and accident reporting liaison with SJSU and SJSU Research Foundation
- Insurance and permitting (international travel, etc.)

Graphic Design Department

The MLML Graphic Artist is responsible for the design and production of an array of artistic and graphic products in a variety of media forms for MLML faculty, staff, and student projects and research. The MLML Graphic Artist provides support in various areas such as:

- Computer-aided scientific graphic production
- Publication support
- Advice in art techniques
- Instruction on photographic and computer graphic techniques
- Assistance with digital photography retouches
- Consultation with users on scientific poster production

Curriculum Committee

The MLML Graduate Curriculum Committee is the academic policy link between the students, program, and consortium campuses. Some of the responsibilities of the MLML Curriculum Committee are to:

- Assure offered courses fulfill the academic needs of the graduate program
- Ensure MLML graduate program policies meet all consortium campus regulations
- Develop new graduate program policies
- Review and approve changes to the MLML Graduate Student Handbook
- Communicate policy changes to faculty and students
- Review and recommend courses for inclusion into the curriculum

MLML Student Body Officers

The MLML Student Body Officers serve as the spokespersons for the students and provide assistance in coordinating lab-wide events. Student Body Officers assist in keeping the lines of communication open between students and the MLML community as a whole through attendance at faculty, staff, and board meetings (excluding those parts where confidential information is discussed) and provide student input to MLML discussions and concerns. In addition, the MLML Chair holds meetings with the graduate student body at least once per academic year.

MLML Student Body Officers:

- Serve as spokespersons for the student body to faculty and staff regarding student concerns
- Maintain and govern all student body areas
- Plan, fund, and execute the New Student Orientation every semester
- Serve as liaison between the Student Body and home campuses regarding student organization status
- Fund, execute, and assist in the planning of the MLML Seminar Series
- Create a retroactive balanced budget and secure incoming funding for the Student Body

- Plan, fund, and execute student body events and activities
- Plan, fund, and execute MLML's annual Open House

Student body activities and events include hosting a weekly academic seminar series, and putting on annual events such as the Halloween Party, a lab-wide Open House, new student orientation, and a bowling tournament. The student body may also organize pick-up games of soccer and ultimate frisbee, along with volleyball, foosball, and ping-pong games at the lab. Other social activities include movie nights, barbecues and bonfires, and carpooling. Funding for student body activities is raised from Open House t-shirt sales, home campus funding, and MLML fundraising events.

The MLML student body officers are elected by a majority vote of the graduate students at the end of each fall semester, and serve for a term of 1 year.

Student Body Officer responsibilities are:

President

- Prepare agenda items for each meeting
- Serve as a liaison to administration and faculty
- Seek out and resolve any academic issues that come forth from the student body
- Coordinate with consortium campuses regarding funding

Vice-President (2 may serve)

- Perform the duties of the President in his/her absence
- Provide student insight and knowledge about programs by soliciting feedback from all student groups
- Maintain all student spaces (student lounge, student desk area, etc.)

Treasurer

- Appropriate the student body funds for the weekly seminar series and special events
- Maintain a balanced budget and maintain proper funds in all bank accounts

Secretary (2 may serve)

- Record meeting minutes, send emails, etc.
- Help organize special events
- Post signs for all events

WHO TO GO TO FOR HELP

Student Support Services

Graduate students seeking academic, administrative or financial assistance should approach their faculty advisor or the Graduate Program Coordinator to discuss any issues that may affect the student's status in the program.

Graduate students with confidential issues, personal matters, or student support service concerns may report directly to the Graduate Program Coordinator or MLML Chair.

CSU Campus Policies	Graduate Program Coordinator
Class Purchases	Administrative Support Coordinator
Degree Requirements	Graduate Program Coordinator
Student Handbook Policies	Graduate Program Coordinator/MLML Chair
Enrollment Deadlines	Graduate Program Coordinator
Enrollment Fees	Graduate Program Coordinator
Graduation Requirements and Deadlines	Graduate Program Coordinator
Thesis Formatting and Deadlines	Home Campus/Graduate Program Coordinator
Financial Aid	Home Campus/Graduate Program Coordinator
Confidential Advising/Grievance/Complaints	Graduate Program Coordinator/MLML Chair
General Graduate Program Questions	Graduate Program Coordinator
Human Resource/Personnel Information	Administrative Support Coordinator
IT Support (email problems, printing problems, etc)	Submit Help Desk I-Ticket Request
Keys (main building, lab, student offices)	Facilities Supervisor
Legal Residency	Graduate Program Coordinator/Home Campus
Payroll Information-Foundation Hire	Fiscal Services Assistant
Payroll Information-State Hire	Administrative Support Coordinator
Research Grant Purchases	Fiscal Services Assistant
Research Project Construction	Facilities Supervisor
Research Questions	Faculty Advisor
Safety & Health Hazards	Environmental Health & Safety Officer
Populi	Graduate Program Coordinator/IT Department
Student ID Cards	Graduate Program Coordinator
Suggestions Regarding Student Support Services	Student Body Officers
Vehicle Screening Eligibility	Environmental Health & Safety Officer
Vehicle Reservation Checkout	Administrative Support Coordinator

Personal Growth and Counseling Services

Personal growth and counseling services are available to currently enrolled graduate students at MLML. These services provide a high quality of counseling, consulting, educational outreach, crisis intervention, support groups, and referrals all designed to help students:

- Resolve personal problems that interfere with academic success
- Develop personal growth and healthy relationships
- Enhance individual potential
- Adjust to and cope with graduate school life and pressures
- Resolve life crises that threaten persistence in graduate school
- Deal with problems stemming from personal life experiences, trauma, and situational stress
- Learn skills to optimize decision-making, problem solving, communication, managing stress and resolving conflicts.

These services are free and available to students in a private and confidential environment. Students may contact the home campus office below to set up a confidential appointment. The MLML Graduate Program Coordinator is also a resource for MLML students.

Campus	Phone	Home Campus Location
East Bay	510-885-3690	Student Services Bldg.
Stanislaus	209-667-3381	Mary Stuart Rogers Gateway Building, Room 210
Monterey	831-582-3969	Building 80
San Jose	408-924-5910	Administration Bldg., Room 201
Sacramento	916-278-6416	Student Health Center
San Francisco	415-338-2208	Student Services Bldg., Room 208
Fresno	559-278-2734	Student Health Center

MLML RESEARCH RESOURCES

Scientific Diving Program

MLML's American Academy of Underwater Sciences (AAUS) scientific diving program facilitates faculty, staff, and student diving associated with university or SJSU Foundation projects. A student must be approved to dive by the MLML Diving Safety Officer (DSO). If a student is a certified recreational diver with limited experience (<25 dives) or no diving experience in similar cold water conditions (50°F, kelp, surge, etc.) they may be qualified to enroll in MLML's research diving course MS 105: Marine Science Diving or the summer Marine Science Diving - MLML/CSUMB course. This course satisfies the requirements for the MLML Scientific Diver Certification but cannot be used toward an MLML graduate student's 30-unit requirement. If a student has a current scientific diving certification at a recognized AAUS scientific diving program, then reciprocity may be granted. All prospective divers should visit the certification link on the MLML Marine Science Diving website, contact the DSO, and fill out the appropriate application materials. If a student has a current scientific diving certification at a recognized AAUS scientific diving program, they may be admitted to the Scientific Diving Program with a letter of reciprocity from their former DSO, subject to approval and verification by the MLML DSO.

Small Boats Operation Program

MLML operates a fleet of small boats (30' R/V *Sheila B.*, four 17' Boston Whalers, slough boat, Rigid Hull Inflatable Boat (RHIB), and two Zodiac inflatable boats) used exclusively for research and education. Access to MLML vessels is a privilege, not a right. Maintaining good standing as a MLML Small Boat Operator requires continuing demonstration of safe boating practices and good judgment. MLML students, faculty and staff as well as personnel from associated institutions must successfully complete the California Department of Boating and Waterways Safe Boating Course and provide the MLML Small Boat Operations Coordinator with a copy of the completion certificate prior to scheduling a training session at MLML. In-house training is conducted on an as-needed basis, generally in groups of 2 to 5 students per instructor. This is a 6 hour course covering facility logistics, cruise plans/reports, basic charting/navigation, communications, decision-making with regard to sea state and weather conditions, basic outboard motor principals of operation contrasting 2-stroke and 4-stroke design, visual distress signals and other safety gear use as well as underway time practicing and demonstrating general boating competence. This includes proper loading, communication, understanding ATONS, VHF and GPS use, low speed vs. high speed maneuvering, engine trim and tilt, working into weather vs. downhill, MOB, anchoring and docking.

Depending on demonstrated skill levels, participants completing this process are authorized at the basic level, allowing for operations conducted from our docks into Elkhorn Slough and to within a 1 mile radius of the Moss Landing Harbor entrance. Less-skilled operators are conditionally authorized to pilot the whalers in the company of more experienced MLML boaters. Remote operations, and offshore use requests, are handled on a case-by-case basis and require demonstrated proficiency in these areas. Trailer use authorizations are handled separately as well.

Authorizations to Captain the R/V *Sheila B.* require current Basic Small Boat status, extensive vessel specific orientation and 40 hours underway time with a trained operator. Much of this process can be abbreviated based on prior documented training and experience at the discretion of the Small Boat Operations Coordinator.

All boats can be reserved online through the MLML Intranet.

Vehicle Use and Safety Policy

One mission of Moss Landing Marine Laboratories is to deliver our students and researchers to the frontiers of marine science, safely and appropriately provisioned. In many cases, these frontiers lie

outside the Laboratory and a variety of conveyance and transport are necessary to accommodate our mission. The vehicles at MLML are a resource for those qualified drivers on laboratory, thesis, or research-related trips. In addition, they are used in support of teaching and maintenance. Other uses may be pre-approved by the Director. As multi-use, multi-user vehicles, users must exercise a high degree of personal responsibility when taking advantage of these laboratory resources.

Users

A User is anyone affiliated with the laboratories and:

1. Holds a current Defensive Driving Certificate
2. Maintains a driver's license in good standing
3. Is signed onto the DMV Pull Program

AND

4. Has a legitimate reason for operating Laboratory vehicles.

Typically users may be faculty, staff or students at the Labs. In special circumstances, this may include other persons appropriately certified and pre-authorized by the Director to drive these vehicles. *Drivers must participate in the DMV Pull Program to use MLML state vehicles.*

IMPORTANT: State vehicle users should understand that our vehicle insurance only covers injuries and damage to other people and property. Should an accident occur, neither you, your vehicle occupants, nor our vehicles are covered by any state vehicle insurance. It is strongly encouraged that you maintain personal health insurance if you wish to use state vehicles. Responsibility for vehicle repairs will be determined depending on specific circumstances.

Reservation of Vehicles

The reservation of vehicles should be made through MLML web site calendar. Users must indicate which vehicle they will need, where the vehicle will be operated, when the vehicle will be returned and contact information so that they can be reached if plans, or vehicle availability, changes. Passenger names should be included on the check-out form. Use of the dive truck is subject to approval by the Diving Safety Officer.

Where conflicts arise, the general priority for use will be #1 Classes, #2 Funded Thesis Research, #3 Non-Funded Thesis Research, #4 Facility Use, and #5 Other. The Director or his/her designee will arbitrate any conflict regarding priority usage.

Vehicle Recharge

Individuals or groups using the vehicle for funded research (projects, thesis, events, etc.) will be expected to pay a vehicle usage fee at the current mileage rate. At the time of vehicle registration, these individuals must indicate a grant number to which the fees will be charged as well as on the mileage checkout sheet

User Responsibility

It is the User's responsibility to:

- Reserve the vehicle in advance of the trip
- Obtain proper permission and notification if taking the vehicle outside California
- Be familiar with the operation of the particular vehicle
- Insure the proper type of fuel is used in the vehicle
- Make any special seating modifications, stowing removed seats appropriately in the warehouse
- Insure the good working condition of the vehicle (lights, tire pressure, fuel, mirror and seat adjustments, trailer hookups operational, brakes in good-working order, etc.)
- Insure that the driver and all passengers wear their seat belts
- Drive safely, observing all traffic laws
- Return the vehicle to its normal configuration
- Insure vehicle is driven within normal limits of operation
- Monitor engine temperature, oil pressure, fuel, coolant, oil and other fluid levels and top up if necessary

- Report any accident or collision immediately to the appropriate authorities, MLML and SJSU as per the instructions in glove compartments of each vehicle
- Fill out accident report form (STD270) and gather information from others at scene.

Return the vehicle in good working condition:

- Trash removed
- Carpets clean
- Body and windows reasonably clean
- Fuel at ½ tank or greater (**Note: ensure correct fuel type is used**)
- Restore seating if modified
- Return keys for the next operator
- Report any equipment problems, or maintenance requirements to the Front Desk immediately upon return of the vehicle

Facility Responsibility

The Health and Safety Officer and the Front Desk staff have the responsibility to:

- Keep the vehicle reservation calendar and schedule
- Maintain user records
- Report problems to Vehicle Coordinator
- Check out vehicles, cards and keys to users

It is the Vehicle Coordinator's responsibility to:

- Maintain all maintenance records
- Respond immediately to all reported vehicle problems
- Perform periodic maintenance checks
- Schedule and arrange delivery of vehicle for service performed outside the labs
- Report maintenance records as appropriate to SJSU
- Keep the vehicles in a clean and safe operating condition

Forklifts

Users must have separate and additional training and permission to use the forklifts and must operate the forklifts in a manner consistent with their designed use. Users must report all maintenance problems to the Vehicle coordinator.

MLML/MBARI Research Library

The MLML Research Library, jointly funded by the Monterey Bay Aquarium Research Institute, supports the educational and research needs of faculty, staff and students with staffing during normal hours, typically 8:30 to 5:00 pm. An introduction to collections and services is offered at the beginning of each semester in conjunction with new student orientation. After-hours access to the Library is available to MLML graduate students who have attended this library orientation and visiting students with the Librarian approval.

MLML Museum

Over the past 50 years MLML has assembled a functional and diverse Marine Biology Collection (MBC) to meet the needs of MLML research and educational activities. The focus is on four broad taxonomic groupings: seaweeds, marine invertebrates, marine fishes including chondrichthyans, and marine mammals, birds and turtles. Within most of the taxonomic groupings the MBC is divided into teaching and research collections with each having different goals; the teaching collections are largely designed to provide students with the greatest exposure possible to the diversity of organismal form and function, whereas most of the research collections gain their strength by uniquely focusing on geographic regions. Three specialized collections are also contained within the MBC: the Global Kelp Archive, the Pacific Shark Research Center's Shark Taxonomy Collection, and the Prey Otoliths Observed in Predators

Collection. The MBC serves to facilitate research activities at MLML, Monterey Bay partner institutions, and private and public institutions and universities worldwide.

The Museum Coordinator manages the museum equipment, supplies, chemicals, and bench space. Use of the museum and collections is subject to approval by the faculty advisor and Museum Coordinator.

Friends Of Moss Landing Marine Laboratories

The Friends of Moss Landing Marine Labs (FoMLML) is an organization that involves and educates the public in the research and education efforts of MLML. The Friends seek to serve as a liaison between MLML and the community-at-large, to support the research and education work of the laboratories, fostering such support through public education programs, events, fundraising activity, and an active alumni association.

Friends accomplishes this goal in a number of ways:

- Publishing the WAVE newsletter
- Conducting the public seminar six times per year
- Maintaining and expanding the membership and MLML alumni database
- Raising funds and facilitating MLML graduate student scholarships
- Maintaining and expanding retail sales to support MLML

Students are encouraged to learn more about FoMLML and participate in FoMLML events.

Additional Facilities

Machine Shop, Necropsy Lab, Aquarium Room, Trace Metals Lab, Marine Pollution Studies Lab, Flume, Dark Room, Flow Analysis Lab, Analytical Lab, Video Analysis Lab, and Marine Operations.

Affiliated Programs and Organizations

Students are encouraged to familiarize themselves with the many affiliated organization and programs at MLML. These can be a source of thesis ideas and employment opportunities. Thesis projects involved with these groups should be coordinated with your faculty advisor.

Additional information on the affiliate programs and organization can be found on the MLML home page.

STUDENT ADMINISTRATION

Financial Support

MLML provides graduate student financial support in the form of Graduate Assistantships, Student Assistantships and student scholarships. Students should contact their advisor about Graduate Assistantships or Student Assistantships. Students are encouraged to contact the MLML Graduate Program Coordinator, their home campus, or refer to the MLML Graduate Program website for funding opportunities. Students are strongly encouraged to secure independent support during their entire academic career.

Email Accounts

All MLML graduate students receive an MLML e-mail account before beginning classes their first semester. Each student email address is included in the MLML graduate student email alias group msms@mlml.calstate.edu. All communication with students from the MLML Front Office Administration and the Graduate Program Coordinator will be conducted through the student's MLML e-mail address. As courses are taught only one day per week, email is the primary mechanism for MLML faculty in contacting students in between lectures. All students need to develop a habit of checking their MLML e-mail accounts frequently, ideally every day but at least a few times a week, or forward mail from this address to a personal account.

Enrolling In Classes

All students looking to take courses at MLML are required to reserve space through the MLML's Populi system. All graduate students must have the proposed schedule approved by their faculty advisor. Undergraduates and Open University students must have the proposed schedule approved by the MLML Graduate Program Coordinator. Once a student's schedule has been approved, the MLML Graduate Program Coordinator will send the student instructions for officially enrolling through the student's home CSU campus. Reserving space alone does not confirm the student's registration in the course at his/her home campus.

Course instructors use Populi to generate course rosters and input grades. Grades cannot be assigned to a student unless he/she has reserved space in a class via Populi. Once a schedule has been submitted for approval, all registration changes must be made through the MLML Graduate Program Coordinator. All students must update personal and emergency contact information before reserving space in courses via Populi.

Textbooks

Textbooks may be purchased used or new through online websites such as amazon.com, bn.com, ecampus.com, or textbooks.com. MLML will generate a textbook list five weeks before the start of each semester. Student may contact the Front Office Administration for assistance.

Keys and Keycards

A newly admitted MLML graduate student may obtain key cards from the MLML Facilities Supervisor for access to the MLML library and main building. Laboratory keys can only be obtained with written permission from the student's faculty advisor. A visiting student must have written permission from his/her instructor for keys to be issued. Students who need keys shall fill out a Key Request Form. All keys and keycards must be returned upon graduation or at the end of each semester for visiting students.

Photocopying

A photocopier is available for MLML student use in the library free of charge. Copies made by or for a faculty member should be made using the faculty copier code. The copier in the front office is for faculty, staff, and Graduate Assistant (GA) use only. GA's will be given a code to use the copiers for class-related copying. A GA's copy code may be used at either the front office copier or library copier.

Mailboxes

A mailbox will be assigned to each first year student in the mailroom associated with his/her lab. All student mail will be directed to the front office and placed in the appropriate laboratory mailbox, which is to be collected and distributed by laboratory members. Students may also use the MLML address for outside mail related to educational endeavors. A student should use his/her home address for personal mail, bills, etc.

MLML Address: John Smith
 C/O: Mammal Lab
 Moss Landing Marine Laboratories
 8272 Moss Landing Rd.
 Moss Landing, CA 95039

Mail Postage

MLML will pay for any mail that is lab-related. The Front Office Administration should be consulted to determine what constitutes "lab-related." Those wishing to send personal mail should see the Front Office Administration.

Office Supplies

MLML graduate students are responsible for purchasing their own office supplies for use in classes. The MLML Front Office Administration does not provide office supplies to graduate students. If a student is serving as a Graduate Assistant for a course he/she may obtain the necessary supplies from the MLML Front Office Assistant to perform Graduate Assistant duties. These materials may include: overhead transparencies and markers for discussion sections, pens to use in correcting papers and paper for documentation. If a student is working with a faculty advisor on a research grant or in the faculty advisor's laboratory then he/she should check with his/her faculty advisor to make arrangements for supplies to be covered by the faculty advisor or grant.

Financial Aid

Students should consult their home campus Financial Aid office and the MLML Graduate Program Coordinator for information regarding financial aid, including the number of semester units required to qualify for a given source of funding. MLML strongly encourages all students to apply for the Free Application for Federal Student Aid (FAFSA) regardless of the student's academic support for the coming year. The Free Application for Federal Student Aid (FAFSA) and renewal application are available online.

Payroll Information

MLML students employed as Graduate Assistants for an instructor, or Student Assistants for the labs (i.e. front desk assistant, courier assistant, librarian assistant, IT assistant, etc), are paid through San Jose State University's payroll. Student Assistants paid from a grant held by a faculty member are paid through the San Jose State University Research Foundation's payroll system.

MLML encourages all State and Foundation employees to apply for Direct Deposit. Direct Deposit may take as much as two pay cycles to go into effect. In this event, you will receive a paycheck until the Direct Deposit is in place.

State Student Assistant Time Sheets & Paychecks

State Student Assistants should submit their timesheets on the 28th of each month. State Student Assistants will need to project their hours for the last 3 days of each pay period. Paychecks are distributed on the 14th of each month, unless the 14th falls on a weekend.

The Front Office Administration will not accept student time sheets without a supervisor's signature, and the Director cannot sign a time sheet without the consent of the student's supervisor. Please plan accordingly for these monthly deadlines.

State Graduate Assistant Time Sheets & Paychecks

State Graduate Assistants are contracted appointments with San Jose State University. GA's do not submit timesheets as they are contracted to a set amount for the semester, based on the number of hours they are assigned. GA's will receive five paychecks for their semester assignment, which are distributed on the first of month, unless the first falls on a weekend. GA's will receive their first paycheck after they've completed their first month of their GA assignment. Fall semester paychecks are distributed from October through February, and spring semester paychecks are distributed from March to July.

Foundation Student Assistant Time Sheets & Paychecks

Foundation payroll checks are distributed through the front desk at MLML on the 10th and the 26th of every month. If a payday falls on a weekend then employees are paid on the previous Friday. Timesheets for the 1st half of the month (1-15) are due on the 10th to the Foundation Fiscal Assistant. Timesheets for the last half of the month (16th - 31st) are due on the 26th of each month. Please refer to the MLML Foundation Timesheet calendar for any exceptions. Foundation employees are always asked to project their hours for the last 5 days of each pay period. Please direct all Foundation payroll questions to the Foundation Fiscal Assistant.

The Foundation Fiscal Assistant will not accept student time sheets without his/her supervisor's signature, and the Director cannot sign student time sheets without the consent of the student's supervisor. Please plan accordingly for these monthly deadlines.

MLML Scholarship Recipient Paychecks

MLML scholarship recipients are paid through their home campus financial aid office. MLML scholarship monies are housed at the SJSU Tower Foundation, and must be routed to the appropriate home campus financial aid office. This process can take more than a month.

Taxable Scholarships and Fellowships

Most financial aid grants, scholarships and fellowships awarded from the university and outside sources are taxable, with the exception of amounts used to pay for:

1. Tuition and fees required for enrollment or attendance at the university
2. Books, supplies, and equipment required for classes (not field research)

Students must pay taxes on any part of a scholarship, fellowship or even a tuition reduction that can be attributed to any teaching, research or other services that the students have performed, are performing, or will perform (regardless of whether the service is required for students degree). In addition, if students receive money for room and board, travel expenses, research expenses, clerical help or non-required equipment and supplies, all that money is considered taxable income. These items are termed "incidental

expenses" because the item(s) are not required for enrollment in or attendance at the student's university. Incidental expenses must be reported as taxable income, whether or not student receives a W-2.

If a student is unsure if his/her scholarship or fellowship is tax-free, he/she should contact the grantor or home campus financial aid office. Specific questions regarding education tax incentives and personal taxes should be addressed to the Internal Revenue Services, www.irs.gov. The student's home campus Graduate Student Association may hold an annual graduate student tax workshop to assist student with tax questions. Students are responsible for withholding their own taxes (federal and state) on the taxable portions of student grants, scholarships, fee reductions and fellowships.

Housing

MLML has 2 2-bedroom houses (for a total of 4 bedrooms) in the Sandholdt Center Housing, located on the MLML campus. The Sandholdt Center Housing consists of two homes, the North House and the South House, each of which has two bedrooms that can be rented. Students may live in the Sandholdt Center for 1 lease term (August 1st through July 15th of the following year) unless no other students are interested, at which point they may stay for another lease term. Utilities and Internet are included in the monthly rent. No pets or long-term guests allowed. For any questions regarding the Sandholdt Center Housing, contact the MLML Graduate Program Coordinator.

Monterey Bay has 4 local newspapers with rental classifieds: the Monterey Herald, Santa Cruz Sentinel, Salinas Californian, and Watsonville Pajaronian Register. Many students refer to the online rental listings found on Craigslist.com.

In addition, MLML maintains a bulletin board (outside the Administration offices at MLML) with a list of houses and apartments available in the area, and emails are sent out regularly by staff and students with housing information. Students looking for housemates may place messages on the housing board or online. Students interested in posting to the board should contact the Front Desk staff.

Health Care and Insurance

Each campus offers a Student Health Insurance package to registered students. Students must be registered and apply through their home campus for the coverage. Student should contact his/her home campus Student Health Center for additional information.

All MLML students are entitled to use their home campus CSU Student Health Center. If possible, it is always better to phone ahead for an appointment. Diving physicals are offered by SJSU and CSUMB's Health Center. CSUMB provides basic, local healthcare to all MLML students through their contracted providers.

MLML COURSES

All MLML courses are offered one day per week to accommodate students traveling from consortium campuses and to provide blocks of time for faculty, student research, and field trips. Courses are generally 4 units and held from 9:00 a.m. to 5:00 p.m. which allows for 3-4 hours of lecture in the morning, and 3-4 hours of lab or field work in the afternoon.

Undergraduate Level Courses

MS 103 Marine Ecology

Fall 4 Units

Field-oriented introduction to the interrelationship between marine and estuarine organisms and their environment; emphasis on quantitative data collection and analysis. Prerequisites: ecology, statistics, instructor's consent.

MS 105 Marine Science Diving

Fall/ Summer 3 Units

Skin and SCUBA diving course; pool-training culminates in ten ocean dives. Topics covered include diving physics, physiology, diving environments night diving and research diving. Successful completion gives NAUI and MLML certification. Prerequisites: CERTIFIED SCUBA DIVER (OR EQUIVALENCY AS DETERMINED BY INSTRUCTOR), upper division science major status, thorough physical examination, ability to pass swimming test. Course cannot be used to meet 30-unit degree requirement.

MS 112 Marine Turtles, Birds, and Mammals

Alt. Fall-Odd Years 4 Units

Systematics, morphology, ecology and biology of marine turtles, birds, and mammals. Prerequisites: upper division college vertebrate zoology instructor's consent; MS 103 recommended. **Course is generally offered alternate fall semesters during the odd years.*

MS 113 Marine Ichthyology

Spring 4 Units

A description of the taxonomy, morphology and ecology of marine fishes. Both field and laboratory work concentrate on the structure, function and habits of marine fishes and the ecological interactions of these fishes with their biotic and abiotic surroundings. Prerequisites: college zoology or equivalent or instructor's consent; MS 103 recommended.

MS 124 Marine Invertebrate Zoology I

Spring 4 Units

A field-oriented introduction to the structure, systematics, evolution, and life histories of the major marine phyla. Prerequisites: college zoology or instructor's consent; MS 103 recommended. **Course is generally offered alternate fall semesters during the odd years.*

MS 125 Marine Invertebrate Zoology II

Varies 3 Units

A field-oriented introduction to the structure, systematics, evolution, and life histories of the minor invertebrate phyla. Prerequisites: college zoology or consent of instructor; MS 103 and MS 124 recommended.

MS 131 Marine Botany

Fall 4 Units

Introduction to the plants of the sea, marshes, and dunes, with emphasis on the morphology, taxonomy and natural history of seaweeds and vascular plants. Prerequisite: MS 103 recommended, or instructor's consent.

MS 135 Physiology of Marine Algae

Fall 4 Units

Understanding the adaptations of marine algae to their environment, including respiration, enzyme activity, and biochemical composition. Hands-on experience in basic electronic instrumentation, chemical separations, optical measurements, culturing methods and radioisotope techniques. Designed for students interested in the biology of seaweeds and phytoplankton. Prerequisite: MS 103, 131, 144 or instructor's consent.

MS 141 Geological Oceanography

Fall 4 Units

A study of the structures, physiography, and sediments of the sea bottom and shoreline. Prerequisite: consent of instructor.

MS 142 Physical Oceanography

Fall 4 Units

An introduction to the nature and causes of various oceanic motions including currents, waves, tides and mixing, and the physical properties of seawater including transmission of sound and light. Limited use of calculus. Prerequisites: college algebra, college physics recommended, or instructor's consent.

MS 143 Chemical Oceanography

Spring 4 Units

An introduction to the theoretical and practical aspects of the chemistry of the oceans, including major salts, dissolved gases, nutrient ions, carbonate system, transient tracers, and shipboard sampling techniques. Prerequisites: one year of college chemistry.

MS 144 Biological Oceanography

Spring 4 Units

The ocean as an ecological system. Emphasis will be on the complexity of environmental influences on plankton, the transfer of organic matter between trophic levels and nutrient cycles. Laboratory sessions will include methods in sampling, shipboard techniques, identification of the plankton, and current analytical techniques. Prerequisites: general biology, general chemistry, or instructor's consent.

MS 175 Topics in Marine Sciences

Varies 1-4 Units

The study of a selected area in the marine sciences. The subjects will vary depending on student demand and availability of instructors. May be repeated for credit when topics change. Prerequisite: instructor's consent.

MS 180 Independent Study

Fall/Spring 1-4 Units

Faculty-directed Study of selected problems; open to undergraduate students with adequate preparation. Prerequisite: consent of instructor. Offered every semester. Note: SFSU and CSUH students must file a petition with their home campus department prior to registering for this class.

Graduate Level Courses

MS 201 Library Research Methods

Spring 1 Unit

Students will gain an advanced understanding of the nature of scientific information. Lectures, discussions and assignments will provide the framework for using and evaluating a variety of information sources in marine and ocean sciences. Strong emphasis will be placed on developing critical skills to interweave knowledge of the history of science into the context of bibliographic tools including the digital realm. Prerequisites: instructor's consent.

MS 202 Oceanographic Instrumentation

Spring 4 Units

Theory and use of advanced instrumentation; advanced field and laboratory techniques for the interpretation of data collected in marine science research. Prerequisites: MS 142 and quantitative analysis. Offered alternate spring semesters.

MS 204 Sampling and Experimental Design

Spring 4 Units

Basic design of experiments and field sampling, including random and systemic sampling, subsampling, survey techniques, single and multifactor experiments using randomized, nested, and blocked experimental designs, and data analyses. Prerequisites: MS 103, 104.

MS 206 Molecular Biology Techniques

Spring 4 Units

A laboratory-based overview of concepts and techniques for the isolation, characterization, and analysis of DNA and RNA. This course presents an overview of standard methods (amplification, cloning, and sequencing), as well as selected specialized techniques (analysis of gene expression). Lectures focus on marine science applications. Prerequisites: college-level genetics, molecular biology, or instructor's consent.

MS 208 Scientific Methods

Spring 4 Units

Course is designed to help students develop an understanding of strengths and limitations of various types of scientific reasoning, methodology, and analysis as they relate to scientific progress. Course centers on: round-table discussions of papers and techniques; interactive computer, laboratory, and field learning experiences; and development of critical thinking and writing skills. Prerequisites: instructor's consent, and approved MLML thesis project.

MS 211 Ecology of Marine Turtles, Birds, and Mammals

Alt. Fall-Even Years 4 Units

Community approach to the ecology of marine turtles, birds, and mammals using experimental and sampling methodology. The class will examine the distribution, abundance, trophic ecology, and behavior of birds and mammals in Elkhorn Slough and Monterey Bay. Prerequisites: MS 103, 104, 112, instructor's consent. *Course is generally offered alternate fall semesters during even years.*

MS 212 Advanced Topics in Marine Vertebrates

Spring 4 Units

Advanced consideration of the ecology, physiology and phylogeny of fishes, birds, or mammals, emphasizing current literature and research. Topics and emphasis will vary depending on student

demand and availability of instructors. May be repeated once for credit when topics change.
Prerequisites: MS 112 or 113, instructor's consent. Likely to be offered alternate fall semesters.

MS 221 Advanced Topics in Marine Invertebrates

Spring 4 Units

Advanced considerations of the ecology, physiology and phylogeny of the various invertebrate phyla emphasizing current literature and research. Topics and emphasis will vary depending on student demand and availability of instructors. May be repeated once for credit when topics change. Prerequisites: MS 124 and instructor's consent. Offered only on demand.

MS 231 Biology of Seaweeds

Fall 4 Units

Discussions on marine macroalgal biology with extensive reading of original literature. Ecologically-oriented individual research projects involving laboratory culture and field experimentation. Prerequisites: MS 131 or instructor's consent.

MS 233 Advanced Topics in Marine Ecology

Fall/Spring 1-4 Units

Selected topics and current issues in marine ecology. The subjects will vary depending on student demand and availability of instructors. Can be repeated for credit when topics change.
Prerequisites: MS 103 and consent of instructor.

MS 234 Advanced Biological Oceanography

Fall 4 Units

Experimental techniques in biological oceanography with emphasis on problems important in plankton ecology. An individual research project involving the use of one or more modern analytical tools will be required. Prerequisites: MS 144 or instructor's consent.

MS 242 Plate Tectonics

Fall 3 Units

Historical background, modern theory and geophysical evidence of continental drift, sea floor spreading and plate tectonics. Examinations of the impact of the recent revolution in historical geology. Prerequisites: MS 141 or instructor's consent. Offered alternate fall semesters.

MS 246 Geology of the Monterey Bay Region

Fall 4 Units

Geology, tectonics and active naturally occurring processes in the Monterey Bay region and in the Monterey Bay National Marine Sanctuary. The geologic and tectonic history of central California, plate tectonic processes, representative stratigraphy and geomorphology of the Monterey Bay region. Offered alternate fall semesters. Prerequisites: MS 141 or instructor's consent.

MS 248 Marine Benthic Habitat Mapping Techniques

Alt. Spring-Odd Years 4 Units

The collection and interpretation of geophysical data that can be used to characterize marine benthic habitats. Basic geophysical principals will be reviewed. Application of techniques will be used to identify and characterize marine benthic habitats, including echosounders, multibeam bathymetry and backscatter, sidescan sonar, seismic profiling, and GIS. Prerequisites: MS 141 or instructor's consent. *Course is generally offered alternate spring semesters during odd years.*

MS 251 Marine Geochemistry

Spring 4 Units

Geochemical processes in the oceans: thermodynamics of low temperature aqueous reactions, weathering, oxidation reduction and biologically mediated reactions, processes occurring at the sea floor and air-sea interface. Prerequisites: MS 103, 143, 1 year calculus or instructor's consent.

MS 261 Ocean Circulation and Mixing

Alt. Spring-Odd Years 4 Units

The mathematical description of the distribution of properties (salinity, density, etc.) in the oceans relating to physical and biochemical processes. Equations of motion, geotropic method, and theory of distribution of variables. Prerequisites: MS 142 and college physics strongly recommended, or instructor's consent. Offered alternate spring semesters. **Course is generally offered alternate spring semesters during the odd years.*

MS 263 Data Analysis Techniques in Oceanography

Spring 4 Units

Lecture, discussion, practical experience with a multi-user computer for marine science applications including use of existing programs and subroutine libraries, computer communications, and scientific programming for data I/O and analysis. Semester project required. Prerequisites: college math, instructor's consent.

MS 271 Population Biology

Fall 3 Units

Principles of the interaction among marine organisms that result in the alteration of population structures. Techniques for assessment and management of populations. Prerequisites: MS 103, 104 or instructor's consent.

MS 272 Subtidal Ecology

Spring 4 Units

The ecology of nearshore rocky subtidal populations and communities with emphasis on kelp forests. Lectures and discussions of original literature. Fieldwork with SCUBA, including group projects on underwater research techniques and community analysis and individual research on ecological questions chosen by the student. Prerequisites: MS 103, MLML diver certification and marine ecology (knowledge of marine algae, invertebrates and statistics recommended). Offered alternate spring semesters. **Course is generally offered alternate spring semesters during the odd years.*

MS 273 Marine Environmental Studies of the Gulf of CA

Spring 4 Units

A comparative analysis of Gulf of California marine environments. Lectures, readings, intensive field work, and composing a scientific paper based on original research. Topics will vary depending on instructors. Taught in conjunction with Mexican faculty and students from La Paz, Mexico, Universidad Autonoma de Baja California Sur. Prerequisites: instructor's consent, students must be able to participate in 2 weeks of field work.

MS 274 Advanced Topics in Oceanography

Varies 1-4 units

The study of a selected area in oceanography. The subjects will vary depending on student demand and availability of instructors. Can be repeated for credit when topics change. Prerequisite: instructor's consent.

MS 280 Scientific Writing

Fall/Spring 3 Units

Techniques and strategies of scientific writing used for proposals, journal submissions, and abstracts for meetings. Students will develop their writing skills by preparing, editing, and rewriting manuscripts. Prerequisites: instructor's consent. (*Available on demand*)

MS 285 Graduate Seminar

Fall/Spring 2 Units

Seminar will be held on topics changing each semester. Each student will be required to give at least one seminar. May be repeated once for credit when topics change. Prerequisite: instructor's consent. Offered spring and fall semesters. Minimum of 2 units required, and maximum of 4 units may be used toward degree.

MS 298 Research in the Marine Sciences

Fall/Spring 1-4 Units

Independent investigations of an advanced nature for the graduate student with adequate preparation. Prerequisite: instructor's consent. Offered fall and spring semesters. Note: CSUF, CSUH, SFSU, and Stanislaus students must file a petition with their home campus departments before admission to this class. **Stanislaus students are required to take one unit of MS 298.*

MS 299 Master's Thesis

Fall/Spring 1-4 Units

Graduate students enroll in 4 units of MS 299 their last or second to last semester while they are writing their thesis. Offered fall and spring semesters. Prerequisites: available only to MLML graduate students who are classified, in good academic standing and advanced to candidacy with MLML and the home campus.