2020-2022

Hawai'i Pacific University

College of Natural and Computational Sciences

MSMS GRADUATE STUDENT HANDBOOK

An instruction manual for earning your Master of Science in Marine Science degree at Hawai'i Pacific University

Contents

On the cover: Albatross chick photo courtesy of Sam Kahng/aerial photo of Waimanalo-Makapu'u campus from HPU Marketing and Communications

Dean's Welcome

Aloha!

The College of Natural and Computational Sciences is pleased to welcome you to the Master of Science in Marine Science (MSMS) program at Hawai'i Pacific University.

The MSMS program was built on our rigorous undergraduate marine science program, our strong extramurally funded research, and our affiliation with the Oceanic Institute. Our program is modeled after the traditional science graduate program, which means you will engage in core and elective course work while working on an intensive independent research project. In doing so, you will work side-by-side with your faculty mentor to discover or synthesize knowledge that contributes to your chosen field of study.

Our graduate program is designed to prepare you for an array of careers, armed with a solid understanding of marine science and the skills to conduct research and communicate your results. At the same time, as an integral member of our program, your activities and the knowledge you create along the way will enhance the impact and reach of our College and will help us continually attract high quality faculty and students to our programs.

The information in this graduate handbook is intended to give you a sound understanding of the diversity, depth, and breadth of our program, as well as an appreciation for the rich and diverse flora and fauna of Hawai'i as reflected in our coursework, research, and learning experiences. HPU has a long history of being a student-centered university, and this program continues that philosophy. In fact, more than any other program in our University, the success of our program is tightly linked to the success of you - our students. You can count on our faculty and our College to support you in your growth and learning, because your success is truly our success.

I extend a personal invitation to each of you to come and talk. I look forward to hearing about your background, interest and goals and how I can assist in your pursuit of excellence as a student and a scientist.

E komo mai!

Brenda A. Jensen, Dean
College of Natural and Computational Sciences

Important Contact Information

MSMS Program Administration

Dr. Oliva Nigro, MSMS Program Director onigro@hpu.edu
(808) 236-5827
Gary Karr, Program Administrator gkarr@hpu.edu
808-259-3132

College of Natural and Computational Sciences Administration

Jeannie Manzano, Assistant to the Dean, jmanzano@hpu.edu (808) 543-8044 (Downtown Campus)

Stephanie Fepuleai, Administrative Assistant, sfepuleai@hpu.edu (808) 356-5279 (Hawaii Loa Campus)

Dr. Brenda Jensen, CNCS Dean bjensen@hpu.edu (808) 236-3533 (Hawaii Loa Campus)

Dr. Carrie Jones, Associate Dean cjones@hpu.edu (808) 236-5839 (Hawaii Loa Campus)

Dr. Andrew Brittain, Department of Natural Sciences, Chair abrittain@hpu.edu (808) 544-0212 (Hawaii Loa Campus)

The offices for the College of Natural and Computational Sciences are located on the Hawai'i Loa campus, Academic Center Suite 206.

The Oceanic Institute at Waimanalo-Makapu'u Campus (WMC)

The Oceanic Institute (OI) manages their own research and facilities at the Waimanalo-Makapu'u Campus and shares the property with the College of Natural and Computational Sciences. OI is one of many departments at HPU. The OI Admin Office, located at the Sea Life Park end of the property, manages details for both OI and CNCS activities at HPU.

Oceanic Admin Office contact: 808-259-3100

Oceanic Institute Security (24/7) (808) 220-2899

When dialing an outside telephone number from an HPU/OI phone press "#", then the number.

For safety reasons students are required to contact OI security when staying past normal business hours (after 6P) or when coming in on the weekends. Your cooperation will help OI security keep you safe when working after-hours at OI/WMC.

Graduate student office, WMC, "Dorm", (808) 259-3118, ext. 73118 from HPU phone

Graduate student office, WMC, Brittingham 201, (808) 259-3113, ext. 73113

Carbon Chemistry Lab WMC, Brittingham 202, from OI phone, ext. 17213 (intercampus phone only)

Jensen Lab WMC, Brittingham 203: from OI phone, 259-3114, ext. 73114
Korsmeyer/Unabia Lab WMC, Doherty 205: (808) 236-3569; ext. 63569
Holland Lab WMC, EMSB
Hyrenbach Lab WMC, EMSB, BRIT 102 (808) 236-3575; ext. 63575
Kahng Lab WMC, Brittingham 200 (808) 236-3574; ext. 63574
Iacchei Lab WMC, OLC Annex, office phone: (808) 236-5841
Nigro Lab, WMC, OLC Annex, office phone: (808) 236-5827
Cetina Heredia Lab TBA
DeCarlo Lab TBA

Center for Marine Debris Research, WMC, EMSB bldg.:

- Jenn Lynch, Co-Director, CMDR; NIST Researcher: 808-236-3582
- Lab Manager, CMDR – 259-3138 (EMSB BioChem Lab)

Hawai'i Pacific University

HPU Financial Aid Office: (808) 544-0253 financialaid@hpu.edu

Registrar's Office: (808) 544-0239 registrar@hpu.edu

Getting settled on O'ahu

Housing

Craigslist **http://www.craigslist.com** is a commonly used for finding rental housing and other services on Oahu: frequently used by businesses and the general public. Just remember, if it sounds too good to be true it probably is.

More housing resources at HPU's Housing and Residence Life website

State Identification

If you are new to the islands you may want to apply for a Hawai'i State Identification card if you do not plan to have a Hawai'i driver's license.

For information about how to apply for a Hawai'i state ID card visit:

http://hidot.hawaii.gov/hawaiistateid/

For information about how to obtain a Hawaii Driver's license visit:

http://www.honolulu.gov/csd/dllicense.html

Public Transportation

If you are planning to take public transportation, you can find bus route maps, timetables, and App to download at: http://www.thebus.org/

Your student fees include a UPass for unlimited city bus transportation each spring and fall semester. Details here.

How things work at HPU

My HPU https://my.hpu.edu/hpu/Home is your one-stop access to review your account, financial aid status, register for classes, review degree plans, access online course materials, check grades, as well as other student services.

HPU WiFi set up: You will be required to authenticate your devices to use the HPU WiFi system. Upon authentication, you will not need to log in to HPU WiFi again until the end of Spring semester. If you have not accessed HPU's WiFi system, please visit the HPU ITS website to get started: https://hpu.teamdynamix.com/TDClient/KB/

All users have a unique Network/Wireless Account. It is your responsibility to register/re-authenticate only the devices that you own as these devices will be associated with your account.

If you have any questions regarding my.hpu.edu or are having technical difficulties, you may report a problem to: helpdesk@hpu.edu

HPU Identification

MSMS graduate students will need 2 separate IDs:

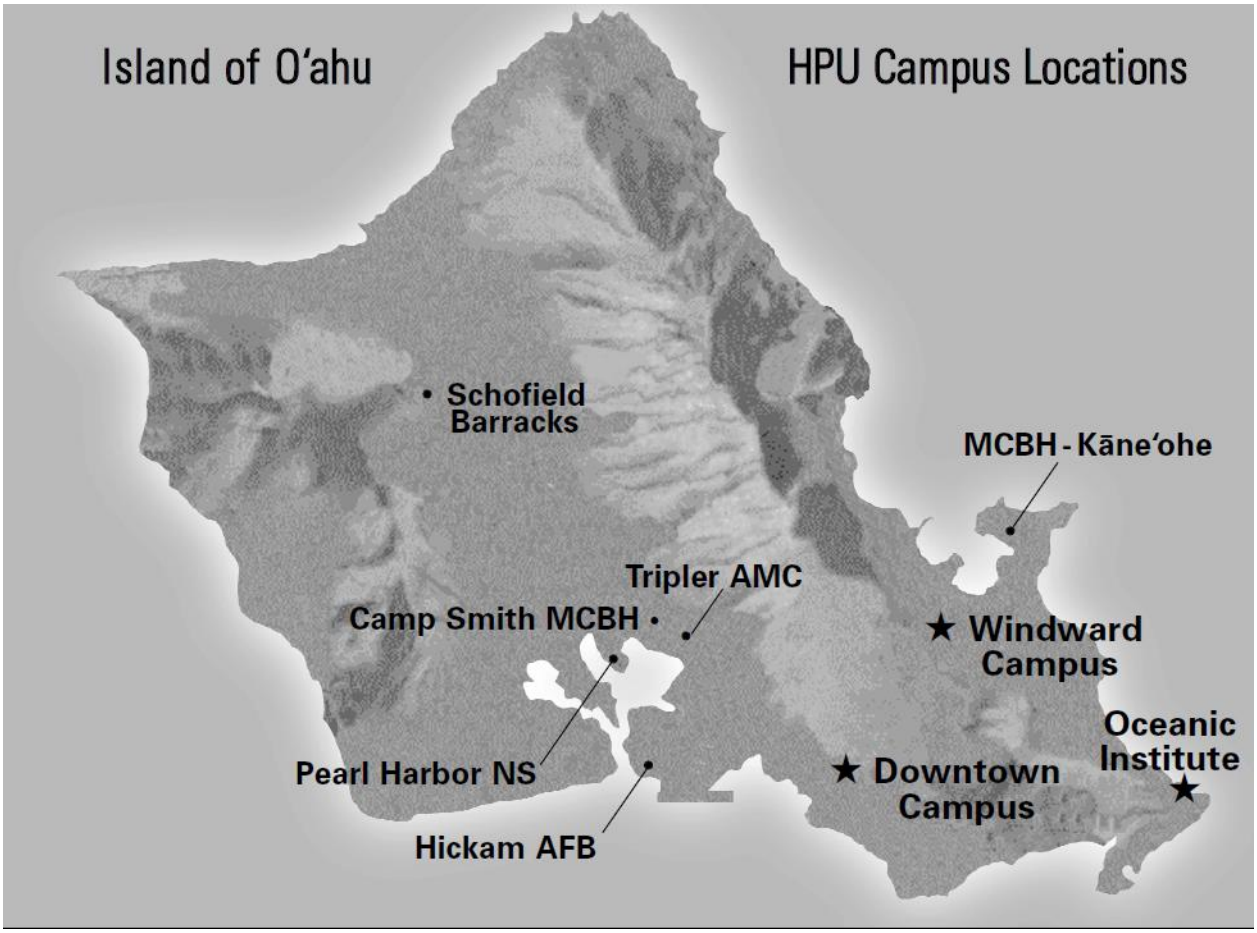
1) *HPU student ID (HPU UNICARD)*
2) *Oceanic Institute ID*

The HPU UniCard is required for some student services which may include access to downtown campus buildings, computer centers, and library services.

To obtain an HPU ID visit: https://www.hpu.edu/registrar/uni-card/index.html

Oceanic Institute Identification

MSMS staff will take photos for the OI ID badge - time and place to be announced.



Downtown Campus (DTC)	**Windward Campus (Hawai'i Loa) (HIL)**	**Waimanalo-Makapu'u Campus (WMC) – Oceanic Inst.**
500 Ala Moana Blvd	45-045 Kamehameha Hwy	41-202 Kalanianaole Hwy
Honolulu, HI 96813	Kaneohe, HI 96744	Waimanalo, HI 96795

The MSMS Program office is located at the Oceanic Institute in the OI "Cottage" as highlighted on map below.

For campus maps and a virtual tour of HPU, visit

http://virtualtour.hpu.edu/

You can also download HPU's mobile app (**myHPU**) to your smartphone to access campus maps and other information.

Traveling Between Campuses

WMC/Oceanic Institute to Hawai'i Loa campus (HIL)
WMC/Oceanic Institute in Waimanalo and the College of Natural and Computational Sciences Dean's Office and classrooms at the Hawai'i Loa campus in Kaneohe are roughly 12 miles apart. Driving between the two campuses takes approximately 25 minutes by car. Be prepared for longer travel times when taking the city bus. Depending on student demand, CNCS may offer limited OI shuttle service for classes at the Ocean Learning Center (OLC) at OI/WMC. The OI shuttle departs Hawaii Loa Campus in the morning in time for the first class scheduled at OLC and returns to HIL mid-morning to accommodate undergraduates needing to get to classes at HIL or Downtown (DTC). If the OI shuttle is operating a schedule will be sent to students before classes begin.
Please note: the OI shuttle may be canceled during the semester if not enough students are using it.

WMC to Downtown campus (DTC)

Although only one MSMS course (SUST 6500) may be scheduled at the Downtown campus, Graduate Assistants serving as teaching assistants may be required to attend undergraduate courses at the DTC. The distance between OI and HPU's downtown Honolulu campus is approximately 18 miles. Travel by car is approximately 40 minutes. If travelling by city bus, the travel time can be up to 1.5 hrs not including wait time. The OI Shuttle does not travel to HPU's DTC.

HIL to DTC

HPU offers an inter-campus shuttle between Hawai'i Loa campus and the Downtown campus (DTC). DTC and HIL are 9 miles apart; it takes about 15 minutes to drive by car. It's also a short city bus ride. During the fall and spring semesters, shuttles leave every 20 minutes during the day and less frequently in the evening. There is no shuttle service during the summer terms and winter breaks. Visit HPU's website for the HIL to DTC intercampus shuttle as schedules are subject to change: *https://www.hpu.edu/residence-life/off-campus/commuter-services.html*

The OI shuttle schedule is not posted online and does not operate over the summer or winter break.

Parking

Hawai'i Loa

There are several student parking lots on the Hawai'i Loa campus. Parking permits for the semester are available. Daily parking rates apply for non-permitted drivers. To obtain a parking permit please visit https://www.hpu.edu/residence-life/off-campus/commuter-services.html for details.

Downtown

Although MSMS students are unlikely to find themselves at the downtown Honolulu campus often, there are many commercial parking garages and parking lots available for parking. Prices surrounding the downtown campus vary and *students should compare rates* as some hourly options can be very high.

Downtown parking options

Oceanic Institute/Waimanalo Makapu'u Campus (OI/WMC)

Free parking is available at OI/WMC. Unlimited parking is available at the Ocean Learning Center parking lot. Parking is also available for students at the OI/Sea Life Park parking lot near the OI administration building; students may park here in the unpaved, gravel area. The paved area is reserved for OI and Sea Life Park employees. Except for these 2 lots, students may not park anywhere else at OI except to drop off and pick up samples or equipment. OI Security monitors unauthorized parking continuously and will tow cars that are parked illegally. For safety, students working late at night may receive a ride to their car from OI security. Students and staff are asked to call OI security to let them know they are on campus anytime they are working at OI after hours (6PM-6AM) or anytime on weekends so that OI can assure their safety. ***Please call the OI 24/7 security tel: 808.220.2899 whenever working after hours (leave message if necessary).***

Overnight parking is not permitted at the Oceanic Institute except for special circumstances. Approval must be obtained by contacting Jeff Harris, Director of OI Facilities at Jeffrey.Harris@hpu.edu. *Arrangements must be made in advance.*

Your program at HPU

Graduate Assistantship (GA)

The Graduate Assistantship is awarded for 4 consecutive semesters.

Students awarded a Graduate Assistantship (GA) tuition discount are required to register for a minimum of 9 credits per semester (minimum full-time status) and are asked to serve the College of Natural and Computational Sciences as teaching assistants (TA) or research project assistants. Students receiving a TIER 1 assistantship will serve 18 hours per week (9 hrs towards college service and 9 hrs towards faculty advisor's research). Students receiving the TIER 1 GA are required to serve as teaching assistants for at least one semester per academic year. Students receiving the TIER 2 assistantship will serve 9 hours per week (if MSMS-T; 4.5 hrs towards college service and 4.5 hrs towards faculty advisor's research). TIER 2 recipients are encouraged to serve as TAs but may fulfil their service requirement by serving on other projects. Students will log GA hours on a time sheet submitted to the MSMS Program Administrator (PA) at the end of each semester. The time sheet requires approval by GA supervisor.

PLEASE NOTE: MSMS-T students receiving the Tier 1 GA who choose to switch to the MSMS-A option will have their GA reduced to the Tier 2 level.

College service may include but is not limited to:

- Serving as a teaching assistant (TA)
- Assisting faculty with a research project. *Project must be different from a student's own thesis research if MSMS-T*
- Mentoring undergraduates by supervising undergraduate research projects

Research commitments for MSMS-T students may include:

- Assisting faculty advisor with laboratory/field projects and basic laboratory maintenance
- Working on the student's own research project in the lab or field

Sometimes a college commitment may require more hours during a semester than the student is required to serve. A student may bank extra hours and apply them towards their college commitment for the following semester. Students will add these extra hours to their time sheet for the semester in which they actually accrued the extra hours. Students may also make up deficits by accruing hours during winter and summer breaks.

Students will inform MSMS program administrator (PA) of their plan to apply extra hours towards a previous or upcoming semester's commitment.

MSMS Faculty Advisors:

Thesis-track students will consult their faculty advisor for guidance regarding curriculum and thesis research. MSMS PA is available to help with registration issues, General Petitions, Petitions to Graduate, and other administrative procedures related to a student's progress.

Applied-track students are advised by the MSMS Program Director and MSMS PA.

Public Presentations

MSMS Student Symposium
Each year at the end of August, the MSMS program hosts a symposium of graduate research on the Friday before classes start for fall semester.
MSMS-T students beginning their second year will give a 10-minute oral presentation about their research project. These presentations should summarize their proposed research and inform the audience of pertinent background information, research hypotheses, research plan and methods, and any expected outcomes.
MSMS-A students who have completed at least one credit hour of MARS 6950 Marine Science Practicum during their first year will present a poster describing their practicum project at the MSMS Symposium before beginning their second year, otherwise MSMS-A students will present a poster at HPU's Capstone Symposium at the downtown campus in April of their second year. MSMS-A students typically get started on their practicum projects during winter or spring of their first year.

NSCI 6130 Communicating Marine Science Symposium
Required for graduating MSMS-A students.
At the end of their final spring semester students enrolled in Communicating Marine Science will give a 12 minute oral presentation describing the scope of work and results from their research projects.

Graduation Requirements

The MSMS-T degree requires the completion of 36 credits, consisting of core courses (9 cr), thesis research and course work (12 cr), and elective courses (15 cr). Students will perform substantial research, culminating in a significant written thesis and oral report of this work presented to the entire college.

The MSMS-A degree requires the completion of 39 credits, consisting of core courses (15 cr), foundational courses (9 cr, including a 3 credit marine research practicum), restricted electives (9 cr) and focus electives (6 cr)

PETITION TO GRADUATE PROCEDURES (MSMS-T and MSMS-A)

Students will submit a ***petition to graduate*** (PTG) before they begin their anticipated final semester and will receive instructions and due dates by email. Students planning to finish their programs in a summer term will submit their PTG by the deadline for the previous spring term. *The PTG* ***need only be submitted once,*** *regardless of when the student actually completes their program.*

The Office of Academic Advising will send out an announcement with instructions and deadlines for submitting the PTG.

1. Student will complete the Petition to Graduate and sign form. If MSMS-T, student will obtain their faculty Advisor's signature on *Advisor* line of form.
2. Student will email signed PTG to MSMS PA.
3. MSMS PA reviews PTG, attaches any necessary supporting documentation, obtains approval from MSMS Program Director and forwards the packet to PTG review team at the Registrar's Office.

MSMS Ombudsperson

Sometimes issues arise between students and faculty members. It is recommended that parties involved in a misunderstanding or conflict try to resolve issues together in an open and honest manner. In the event that a conflict cannot be resolved in a timely way, we encourage students to seek help from the MSMS ombudsperson. An ombudsperson is someone who acts as an intermediary between the parties involved in a conflict, can represent the interests of both parties, abides by all requests of confidentiality, and acts toward the goal of resolving conflicts that can interfere with progress toward the degree.

The MSMS Program Director is the official ombudsperson for the MSMS program. If a student feels that they cannot approach the Director with their issue, they may contact the Department of Natural Sciences Chair.

Leave of Absence

A Leave of Absence (LOA) is a means to address unique situations when a student requires a break from their HPU program for medical, family, or other personal reasons. During a leave of absence, it is assumed that the student will not require HPU facilities, such as laboratory access or office space. A student will submit the LOA form for any semester that they plan to temporarily interrupt their progress at HPU. Click here for Academic Forms. As long as the LOA form is on file the student will not have to reapply if they return to HPU after being absent for one academic year. If there is no LOA form on file when the student returns after missing one academic year they will apply for readmittance and pay a $50 fee. If a student does not return to HPU immediately following one academic year's leave they will have to apply for readmittance regardless of whether LOA forms were filed previously or not. ***Please refer to HPU's online Academic Catalog for more on the Leave of Absence policy.***

Advice for MSMS students…

Attend student / faculty get-togethers – it helps you get to know your fellow students and professors better when you see them in social situations.

Get to know other graduate students – you have no idea how much this helps!

Begin reading scientific papers early!

Spend as much time in your office as possible – you'd be amazed how much more work you get done than when you leave after classes.

Talk to students who have previously taken courses you are considering – their feedback will help to prepare you for the class.

MSMS-T "Thesis-Track": Thesis Research & Program Requirements

MSMS-T students will complete a research-based thesis project under the mentorship of a faculty member who also serves as their thesis committee chair. With the help of their thesis advisor, each student will come up with an original research question (hypothesis) and will develop a proposal for collecting and analyzing data to test the hypothesis. In addition to the thesis advisor, at least two additional scientists with expertise in areas that complement the student's research topic will also serve as thesis committee members.

The thesis advisor (committee chair) plays a key role in the education and training of MSMS students. The thesis advisor serves as the primary mentor in guiding the student in all aspects of the thesis research, preparation of the thesis proposal, performing analytical techniques in the laboratory and field, data analysis, and writing of the Master's thesis. The thesis advisor also convenes committee meetings and conducts evaluations of the student's performance. Other thesis committee members usually play a more supporting role, reading and evaluating the student's research proposal and thesis, and providing support and expertise in related theoretical and analytical disciplines.

Graduate Committee

The committee will include a minimum of 3 members who hold a PhD in the sciences or a terminal degree in an appropriate discipline. Two HPU full-time faculty members or one HPU full-time faculty and one OI affiliate faculty must be on the committee. OI affiliate faculty members may chair thesis committees. At least two committee members must be physically present at the thesis defense; one of those must be a HPU full-time faculty member. Committee membership requires approval by the Dean.

The Nomination of Thesis Committee form identifies a student's committee and is signed by all committee members. Thesis committees are typically formed by the end of the students 2nd semester. A committee must be in place when a student defends their thesis proposal. At the very least, the Nomination of Thesis Committee Form shall be turned in to the MSMS office at the same time a student defends their proposal. *Please attach full CV for individuals who are not Regular Members of the HPU CNCS Faculty.*

The appendix at the end of this handbook contains samples of the different forms that need to be submitted by the student to the MSMS Program. You may request a form from your advisor or by emailing MSMS PA at gkarr@hpu.edu.

Student Progress Reports

At the end of each semester, thesis-track students will complete a self-assessment which describes progress made in the NSCI 6900 – Research and NSCI 7000 – Thesis Capstone course and identifies goals for the year ahead if applicable. This is also an opportunity for the student to provide comments about their progress, advisor, and the program. These reports are confidential. The student is not required to share their responses with their faculty advisor. The faculty advisor will also complete their assessment of the student's progress. Completed forms are submitted to MSMS PA and reviewed by the MSMS Program Director. If the Program Director serves as a student's advisor the student report will be reviewed by the Dean's office. A sample of the progress report form can be found at the end of the appendix section in this handbook.

NSCI 7000- Thesis capstone course

MSMS-T domestic students finishing their programs must be registered for at least 3 credits of NSCI 7000 Thesis Capstone, or 5 credits (graduate half-time status) if receiving Federal Financial Aid, during the semester in which they graduate. International students must be registered full-time (9 credits) throughout the length of their program.

However, international students in their final semester with only the Capstone course left may be eligible to apply for a reduced course load allowance. Please contact the Office of International Students and Scholars (iss@hpu.edu) for details prior to registering for your final semester.

A student must be registered for NSCI 7000 during the semester they plan to graduate or the degree cannot be conferred.

Guidelines for Completing the Thesis

The following is a general guide for the process and sequence for completing the thesis.

To ensure timely progress and completion of the degree, students are expected to establish a time-line working with the committee to meet several stepping stones, as described in the student handbook. The time-line will address four milestones:

I. Proposal defense

- A completed proposal approved by the advisor should be submitted to the committee at least two weeks in advance or the proposal defense should be automatically postponed/cancelled.
- Proposal defense outcomes will be: PASS, REVISE, RE-TAKE, or FAIL. If minor revisions are required for the proposal, the candidate will be issued a REVISE outcome, which requires a revision of the thesis proposal. If major revisions are required for the proposal, the candidate will be issued a RE-TAKE outcome, which requires re-defending the revised proposal. A FAIL outcome will lead to a recommendation to abandon the program.
- Written review comments (similar to the journal peer review process) should be provided by the committee members to the student & advisor within one week following the proposal defense.
- The student must submit the revised written proposal for committee approval in order to receive written sign-off. In writing, the student must address these comments by clearly and explicitly defining what changes have been made to satisfy each comment/criticism, and by arguing their point, thoroughly and convincingly, in response to any comment with which they disagree

  ***In Case of Change in Thesis Approach (post-proposal defense)

  If for any reason a substantial change in thesis experimental design is undertaken following the proposal defense, the following actions must be taken:
  - A) Student works with advisor on an appropriate new approach.
  - B) Student distributes a brief but revised proposal to the committee. The revised proposal must include advisor's approval and consist of the following (revised) components of the original thesis proposal: Hypothesis/questions and detailed Methodology, including detailed description of data analyses.
  - C) Following distribution of revised approach, student must get approval of each committee member, either through a committee meeting or individual meetings.

II. Thesis Progress Update

- Prior to extensive thesis writing, students must review their results, interpretation of results, and major conclusions of the thesis by following through with **any one** of the following three options:
  - A) Scheduling a committee meeting with advisor and committee to show major results, interpretations, and conclusions.

- B) Meeting with each committee member individually to show major results, interpretations, and conclusions.
- C) Sending a document of major results, interpretations, and conclusions of the research work, along with figures.

III. Thesis defense

- Thesis defenses should be scheduled a minimum of two weeks prior to the final thesis submission deadline to allow time for final revisions and subsequent review and approval.
- Defenses should not be scheduled during the last week of classes or finals week.
- A completed thesis that has already been thoroughly reviewed and approved by the advisor should be submitted to the committee at least three weeks in advance or the thesis defense shall be automatically postponed/cancelled (barring unanimous approval from all committee members).
    - If the advisor has not thoroughly reviewed and approved the thesis, the defense should be postponed/cancelled.
- Written review comments (similar to the journal peer review process) should be provided by the committee members to the student & advisor within one week following the thesis defense, although major concerns may be communicated sooner.
- The student must submit the revised written thesis for committee approval in order to receive written sign-off. In writing, the student must address these comments by clearly and explicitly defining what changes have been made to satisfy each comment/criticism, and by arguing their point, thoroughly and convincingly, in response to any comment with which they disagree.
    - For students wishing to graduate, all final revisions and response to reviewer comments must be submitted at least one week prior to the thesis submission deadline.

Roles & Responsibilities

The mentoring and advising of graduate students involves multiple parties, each with specific responsibilities, as detailed below:

Role & Responsibility of Dean

- To ensure adequate and appropriate scientific oversight, the Dean must review and approve the proposed committee assignments for each student's thesis.
- Review annual progress reports to ensure that graduate students are making adequate progress and carry out program termination or other actions when students are making insufficient progress (or plagiarism).

Role & Responsibility of Advisor

- Carefully consider potential for success before accepting a student into the program.
- Ensure the student's thesis research is scientifically sound, feasible, of general scientific interest, and appropriate for a Master of Science degree.
- Ensure that the student has access to the resources and expertise required for their thesis research.
- Ensure that the student makes adequate progress towards graduation and report their progress to the dean and the thesis committee on an annual basis.
- Mentor their student with the objective of having them establish a clearly developed **thesis plan** by the end of their second semester.
- Manage the proposal defense process. The following steps are necessary for a proposal defense:
    - The Chair will ensure that the committee receives the approved **thesis proposal** (not a work in progress draft) a minimum of 2 weeks prior to the scheduled proposal defense.

    - The Chair, by virtue of allowing the student to send the proposal to the committee, is confirming that the proposal has scientific merit and an appropriate experimental design.
    - Following the proposal defense, the Chair will ensure that a revised thesis proposal is circulated. The specific details regarding experimental design, analytical criteria, and data analyses to be used to evaluate the hypothesis must be clearly satisfactory to all members.
    - Upon successful revision of the thesis proposal by including the review comments and issues from committee members, the committee will sign the proposal defense form.
    - The Chair will then submit the final proposal with signatures of all committee members to the assistant dean and the MSMS program office manager, for archiving in the student's file.
- Provide committee members with a written synopsis of any committee meetings, outlining any decisions and next steps.
- Play the role of mentor and editor and review and approve the **written thesis** prior to submitting them to the committee for review. Ensure that the committee receives the approved thesis a minimum of 3 weeks prior to the scheduled defense. The time allowed may need to be longer if the defense is scheduled near the end of the Spring or Fall semester.
    - In particular, ensure the following are sound: Scientific content (analyses, scientific merit, etc.); spelling, grammar and writing clarity; scientific formatting standards.
    - If the written proposal or defense does not meet minimum standards, it should be remedied prior to committee review.
    - Approval by the committee chair (advisor) should be viewed as equivalent to a chair agreeing to submission of a co-authored paper to a journal.
    - Ensure student adequately addresses review comments and issues from committee members following the defense.
- Ensure proper lead times (2-week minimum) for scheduling all committee meetings and avoid making unreasonable demands on committee members the last couple weeks of the semester.
- Assist the student in publishing their thesis in a peer-reviewed journal.

<u>Role & Responsibility of Thesis Committee Members</u>

- Provide relevant scientific input into a student's thesis research.
- Sign the final version of the proposed research indicating their agreement that the proposal satisfies the criteria outlined above. If at any point after the proposal they change their mind regarding the soundness of the proposed research, it is incumbent upon them to aid the student in making recommended changes. If late in the process the student can appeal the need for changes given the committee members prior consent of the original design.
- Play the role of peer reviewer on a student's written proposal and thesis.
- Provide written review comments to the student and advisor within 1 week following the proposal defense and thesis defense.
- Provide a thesis proposal defense evaluation to the assistant dean for program assessment.
- Ensure that MSMS theses achieve the appropriate standard for a Master of Science degree.

<u>Role & Responsibility of the Graduate Student</u>

- Complete a brief report and narrative describing their progress and achievements, at regularly-scheduled intervals (one every semester, starting in the second semester enrolled in the program).
- Ensure that issues raised by advisor and committee members are adequately addressed.
- Regularly communicate with advisor and committee members, particularly during the proposal and thesis writing stages.

- Give clear explanation and documentation of how concerns and issues of the advisor and committee members have been addressed (in both the thesis proposal and the thesis itself).

Thesis Proposal Guidelines

For specific guidelines, please consult with your advisor.

Proposal Format

There is no program-wide required format for proposals and the formatting of thesis proposals is subject to the decision of individual committees. As such, it is important that the students discuss the proposal format with their advisors and committee members early on in the writing process, to ensure that all committee members agree with the structure of the proposal. Design of the thesis proposal is a major topic of the NSCI 6110-6112 course series.

Proposal Defense

The proposal defense exam will involve a private presentation of the thesis proposal, followed by questioning by committee members to determine if the student has: 1) a thorough understanding of the literature pertinent to the proposed research, 2) clear and tractable questions/hypotheses, 3) appropriate methods and resources to complete the proposed research, 4) detailed plans for statistical analyses of data, and 5) a realistic timeline for completing the proposed research.

Thesis Format and Guidelines

MS Marine Science Thesis Document Requirements

Minimum thesis requirements: Literature review chapter and primary data chapter with formal thesis formatting.

Required thesis components:

1. Title Page (follow template formatting)
2. Abstract (350 words max)
3. Signature page. Original signatures are required except for non-HPU committee members.
   NOTE: Remember to sign the signature page as author!

   Please edit the signature page by adding the names and titles of your committee members where indicated and ***remove the extra line for 4th committee member if not needed.*** **If printing the signature page template from your mobile device (phone, tablet, ipad) be sure the doc prints on ONE page. We WILL NOT accept a signature page that is not formatted exactly as shown in appendix. You may have to print from your laptop or PC to assure proper formatting.**
4. Copyright page
5. Acknowledgements (starts page number i.)
6. Table of contents
7. Chapter 1- literature review with references. This is page 1 of the thesis. The first chapter should be a literature that gives an overview of the topic, outlines the problem to be addressed in the thesis.
8. Chapter 2- primary research manuscript, with references. This should include novel data addressing the problem outlined in the literature review. This chapter should be written and prepared for peer reviewed journal submission with the exception of some typical aids intended for journal editorial staff. For example, tables and figures should be incorporated into the text near their in-text reference, line numbers should not

be used.

Encouraged thesis components:

9. Additional data chapters formatted as chapter 2.
10. Appendices that present associated reports, additional data, and method development detail that can be helpful for future research, but may not be publishable on their own, is also encouraged.

Formatting:

- Title page, Abstract, and Signature Page should be standard (see templates). In general, the entire thesis must be 12-point double-spaced, Times, Times New Roman, Calibri, or Palatino font.
- Margins should be 1 inch on top, bottom, and sides.
- Manuscripts that are already published can be included in the thesis in the journal format. In this instance the co-authors will need to provide written approval and certify that the student took primary responsibility for all data collection and writeup of the thesis.
- References are typically at the end of each chapter. However, if the student prefers to combine all references because of substantial duplication of references between chapters, then references should go after the last formal chapter.

A word on Hawaiian spellings and punctuation: please confirm that all Hawaiian words in your document show correct spellings and punctuation by visiting this comprehensive online Hawaiian dictionary: www.wehewehe.org

Thesis Presentation and Defense

The thesis defense will be a public event open to HPU faculty and students, colleagues, family members, and friends. The presentation should be approximately 45 minutes with 10 minutes for questions, after which, the thesis committee will privately address the student. At least two committee members must be physically present at the thesis defense; one of those must be a HPU full-time faculty member. Locations and times for the thesis presentations will vary.

Defending your MSMS Thesis:

1. The thesis presentation shall adhere to a format suggested by your faculty advisor.

2. Public defense: The thesis defense date and time must be announced a minimum of 7 days in advance to the CNCS, Oceanic Institute, and the OAA communities. Thesis flyers are prepared by the student and due to MSMS PA **no later than 10 days** before the defense date. MSMS PA will send you a flyer reminder with examples once PA has been notified about the defense. Announcements are posted by the MSMS/CNCS Administration.

Thesis Submission

Instructions for submitting the MSMS thesis:

1. Theses must adhere to the format agreed upon by you and your advisor and program guidelines above.

2. Public defense: The student should anticipate recommendations from their committee for editorial changes in the thesis, and should allow enough time before the end of the semester to make those required changes before the final draft deadline (4:00 pm, the Friday of finals week).

3. Forward an electronic copy of the thesis to MSMS Program Director onigro@hpu.edu for review at least *5 days* before submission deadline. Please copy gkarr@hpu.edu at the same time. This does *not* need to be the final draft for submission but should be fairly close to finished. The Program Director may not be familiar with your research and depends on this review period to become familiar with your work and to read the thesis before the submission due date.

4. The FINAL draft of the thesis should be read and approved by the faculty advisor and thesis committee and the thesis signature page signed before submission to CNCS. *Students do not need to obtain the Dean's signature.* The Dean's signature is not needed to graduate. The Dean will sign off at a later date after reviewing the thesis.

The FINAL draft of the thesis must be approved by the faculty advisor and all members of the thesis committee to receive a letter grade (A-F) for the NSCI 7000 capstone course, and for the degree to be conferred.

5. Following approval from the committee, a hard unbound copy of your thesis printed ***double-sided and in color on high quality bond paper*** along with the *original* thesis cover/signature page shall be submitted to the CNCS Administrative Assistant in the Dean's office, AC 206, by **4:00 pm, the last Friday of the term (last day of finals).** Printing double-sided on standard copier paper will allow text and color pictures, tables, etc. to bleed to the backside of the page creating a poor quality document. We ask for double-sided printing to conserve space in our thesis archive, thus the need for high quality bond paper.

To accommodate off-island committee members, electronic signatures will be accepted from off-island committee members ONLY.

In addition to the hard copy thesis and signed signature page the following must be received by the submission deadline:

1) An electronic copy of your thesis in searchable PDF format emailed to MSMS PA, including a scanned copy of your signed thesis signature page.

2) Your Electronic Graduate Professional Paper Release Form, signed by you and your thesis advisor emailed to MSMS PA. https://www.hpu.edu/libraries/files/graduate-professional-paper-release.pdf

MSMS-T "Thesis-Track" Course Requirements

Your faculty advisor (mentor) is your primary contact for academic advising. Together, you and your mentor will decide on a "degree plan" that best suits your area of interest and satisfies all program requirements.

Graduate Assistantship:
MSMS-T students receiving a graduate assistantship must carry a minimum of 9 credits each semester to be eligible.

THESIS (T) TRACK: 36 credits
CORE COURSES (9 credits)
Student must take at least 3 of the following:
MARS 6050 Marine Ecology (3) or MARS 6090 Biological Oceanography (3)
MARS 6060 Geological Oceanography (3)
MARS 6070 Chemical Oceanography (3)

MARS 6080 Physical Oceanography (3)

NATURAL SCIENCE REQUIRED COURSES (12 credits)

A minimum of 5 credits of NSCI 6900 must be completed by graduation

NSCI 6110 Graduate Seminar I (Part A) (2)
NSCI 6112 Graduate Seminar I (Part B) (1)
NSCI 6120 Graduate Seminar II – offered spring semesters only (1)
NSCI 6900 Master's Research (5)
NSCI 7000 Master's Thesis Capstone Course (3)

ELECTIVE COURSES (15 credits)

A maximum of 3 credits of advanced undergraduate courses (4000-level) can be taken as a graduate student. A maximum of 5 additional credits of NSCI 6900 Masters Research can be taken as electives. Elective courses are chosen by each student in consultation with their graduate thesis committee.

Graduate Courses

BIOL 6090 Advanced Biometry (3)
BIOL 6120 Ichthyology (3)
BIOL 6170 Larval Biology (3)
BIOL 6210 Neuroscience (3)
BIOL 6220 Immunology (3)
CHEM 6310 Marine Natural Products (3)
ENVS 6010 Climate Change
ENVS 6020 Advanced Photovoltaic Systems Design (3)
ENVS 6060 Geographical Information Systems 2: Spatial Analysis
GEOL 6010 Containment Hydrology (3)
MARS 6010 Toxicology and Stress Responses in Marine Communities (3)
MARS 6020 Marine Science Field Methods (3)
MARS 6030 Marine Mammal Biology (3)
MARS 6040 Seabird Ecology and Conservation (3)
MARS 6050 Marine Ecology (3)
MARS 6090 Biological Oceanography (3)
MARS 6120 Coral Reef Ecology (3)
MARS 6210 Marine Fisheries and Management (3)
MARS 6300 Multivariate Applications in Marine Science (3)
MARS 6400 Marine Conservation Biology (3)
MARS 6500 Computational Methods in Marine Science (3)
MARS 6910 Current Topics in Marine Science (1)
MARS 6920 Special Topics in Marine Science (3)
MARS 6930 Marine Science Guest Speaker Series (1)
NSCI 6130 Communicating Marine Science (2)
NSCI 6450 Teaching Undergraduate Science (3)
NSCI 6900 Masters Research (1-5)
SUST 6500 Ecological Economics and Sustainable Development (3)

Advanced Undergraduate Courses

ENVS 4030 Applied Geographic Information Systems (3)

General Petition

The student submits a General Petition (GP) to request that a substitute course will meet a graduation requirement. Please contact MSMS PA to file a GP.

Sample schedules for a full-time MSMS-T student (Thesis-Track) (2-year timeframe)

NOTE: Although it is possible to complete the MSMS-T program in 4 semesters, program completion is project dependent. Thesis students may require an additional semester or more to defend and submit the final thesis.

Credit hours are given in parentheses (A total of 36 credits are required to complete program)

Sample 1:

Fall 1		Spring 1	
MARS core	(3)	MARS core	(3)
MARS core	(3)	Elective	(3)
NSCI 6110 Graduate Seminar I –A	(2)	NSCI 6900 Research	(2)
NSCI 6900	(1)	NSCI 6112 Graduate Seminar –B	(1)
Total	(9)	Total	(9)

Fall 2		Spring 2	
Elective	(3)	NSCI 7000 Thesis Capstone	(3)
Elective	(3)	NSCI 6120 Graduate Seminar II	(1)
Elective (MARS 6910 Current Topics)	(1)	Elective	(2)
NSCI 6900 Research	(2)	Elective	(3)
Total	(9)	Total	(9)

Sample 2:

Fall 1		Spring 1	
MARS core	(3)	MARS core	(3)
NSCI 6110 Graduate Seminar I-A	(2)	Elective	(3)
Elective	(3)	NSCI 6112 Graduate Seminar I-B	(1)
NSCI 6900 Research	(1)	NSCI 6900 Research	(2)
Total	(9)	Total	(9)

Fall 2		Spring 2	
MARS core	(3)	Elective	(2)
Elective (MARS 6910 Current Topics)	(1)	Elective	(3)
NSCI 6900 Research	(2)	NSCI 6120 Graduate Seminar II	(1)
Elective	(3)	NSCI 7000 Thesis Capstone	(3)
Total	(9)	Total	(9)

Timeline for Thesis-Track:

1st Semester

Coursework

Discuss degree plan with your advisor and take a full load of courses
(Refer to sample schedule)

Thesis Committee

Work with your advisor to choose committee members and form your committee

Research Topic

Identify your thesis research topic with the aid of your advisor

Read!

Begin reading literature relevant to your thesis topic

Literature Review

As part of NSCI 6110 Graduate Seminar I this semester, complete a literature review on research topic and explore proposal ideas

2nd Semester

Coursework

Continue taking a full load of courses. You might complete the core courses in this semester

Proposal

Complete your thesis proposal this semester in NSCI 6112 Graduate Seminar I and submit proposal for committee review

If committee finds the proposal unsatisfactory, they may choose to

(1) Dismiss the student from the graduate program
(2) Allow an additional semester or summer to revise the proposal

Research

Begin working on thesis research

Proposal Defense

Schedule proposal defense with committee members

Summer I

TIME TO GET BUSY WITH RESEARCH!!!

The majority of research is conducted in the summer following the successful submission of the research proposal

Public Seminar

The week before school starts…

Give a presentation describing your research at the MSMS student symposium in August

3rd Semester

Coursework

Continue taking courses, wrap up degree requirements

Research

Keep up the research work!

4th, 5th, or 6th Semester (dependent on project)

File ***Petition to Graduate*** form before your anticipated final semester. Watch for HPU email with instructions and due date.

Coursework and Research

All courses and required credits should be completed in this semester

Wrap up research

Thesis

Writing your thesis should be a top priority

By **mid-semester** you should submit a draft of the thesis to your committee

Once the committee has accepted the draft, the student may schedule the thesis defense

Defense

Time to defend again!

Present and defend your thesis to the public and your committee members

You must defend at least two weeks before the end of the term to allow time for any changes that may need to be made to your thesis

Final draft acceptance by the Graduate Program

Advice for T-track students…

Keep in touch with your advisor before school even begins – start to talk about research options and forming a plan for coursework before you arrive.

When you first arrive have a discussion with your advisor about their expectations for you and your expectations for them – ex: contact hours per week, check-in dates, how you will progress, etc.

Get coursework out of the way as soon as possible – dedicate most of your last year to thesis writing.

Look into all funding options and discuss with your committee.

Ex: scholarships, grants, etc.

Check-in with your advisor weekly to make sure you are on track – ask for any recommendations they have for your progress.

Develop your research plan early!

Make sure funding is in place, that the project can run smoothly, set a reasonable timeline.

Try to hold a committee meeting once a month to keep your committee informed and up to date – this can save time later.

Have alternative or back-up projects!

Some projects are high risk or may not work out as planned – it's important to keep an alternative study in mind.

MSMS-A "Applied-Track": Marine Science Practicum & Program Requirements

The applied track provides students with a broad-based, in-depth knowledge of physical, geological, chemical, and ecological processes in the ocean coupled with the technical skills necessary to contribute to the exploration of the marine environment and the management of its living resources. Because the MSMS-A track is designed primarily for students seeking careers in applied resource management, this program emphasizes the practical skills and the analytical expertise required to monitor and manage the global ocean system.

The applied track includes a hands-on practicum experience working directly with marine science professionals to make connections and earn a distinct educational advantage. Full-time students should expect to take 3-4 courses each semester and complete the track in 2 years (4 semesters).

Marine Science Practicum – MARS 6950

This course offers MSMS-A students the opportunity to obtain practical hands-on experience working on a research project or with an organizational employment setting. Hosting organizations will provide students with an intellectually challenging task. In turn, each practicum experience will be designed to meet the specific project goals of the host institution.

Students are expected to work 45 hours for each graduate practicum credit (e.g., 3 credits = 135 h total or ~10 h per week during a semester). Additionally, students are expected to fulfill the prearranged commitments to their host organization or field research project. A practicum course may or may not involve compensation, depending on the specifics outlined with the hosting institution.

ACTIVITIES & REQUIREMENTS:

- Students develop practicum time-line and milestones in the "Practicum Proposal Contract," working with instructor and sponsor. The faculty instructor and the practicum sponsor must approve the contract.
- Students work on project: maintain logbook of daily activities. You are expected to keep a logbook reflecting on the problem-solving process of your day-to-day tasks. The logbook should include the dates and times of work towards the practicum project. It should also reflect your thinking processes and analysis of events while you are actively learning in the workplace. It is not enough to mechanically go about doing tasks, but rather you should be aware of the actual or potential impacts of your tasks. The goal is to produce a log of your experiences that you can later use as a "How-To" or "How-Not-To" resource to guide your future professional endeavors. The journal will remain your property, although instructors will spot check for progress on logbook entries. A copy of the journal will be submitted to the instructor at the end of the semester.
- Students meet regularly with instructor for evaluation and group discussion.
- Present practicum results in a scientific poster and in an oral presentation. Students who have completed at least one credit of practicum credit are required to present a poster of their practicum work (at the HPU Capstone Symposium in April, or at the MSMS Student Symposium in August). On completion of the 3rd credit of practicum, students will be asked to give an oral presentation open to the public.
- Prepare a final report on a topic related to the practicum experience. This may be based on original research results, a literature review, or methodologies used during your practicum work. The topic and format of the report must be approved by the faculty instructor. The report is due at the end of the semester when enrolled in the 3rd credit of practicum.
- The practicum sponsor will complete a student evaluation (see attached form) at the end of each semester of practicum.

MSMS-A "Applied-Track" Course Requirements

Graduate Assistantship:

MSMS-A students receiving a graduate assistantship must carry a minimum of 9 credits each semester to be eligible for the GA.

APPLIED (A) TRACK: 39 credits

CORE COURSES (15 credits)

BIOL 6090 Advanced Biometry (3)
MARS 6090 Biological Oceanography (3) or MARS 6050 Marine Ecology (3)
MARS 6060 Geological Oceanography (3)
MARS 6070 Chemical Oceanography (3)
MARS 6080 Physical Oceanography (3)

REQUIRED FOUNDATIONAL COURSES (9 credits)

MARS 6910 Current Topics in Marine Science (1)
MARS 6950 Marine Science Practicum (3)
NSCI 6110 Graduate Seminar I (part A) (2)
NSCI 6130 Communicating Marine Science (2)
Student must take an additional 1 credit from one of the following:
MARS 6910 Current Topics in Marine Science (1)
MARS 6930 Marine Science Guest Speaker Series (1)

RESTRICTED ELECTIVE COURSES (9 credits)

Student must take at least 3 of the following courses:
ENVS 6060 Geographical Information Systems 2: Spatial Analysis (3)
ENVS 6300 Modeling and Simulation (3)
MARS 6020 Marine Science Field Methods (3)
MARS 6300 Multivariate Applications in Marine Science (3)
MARS 6400 Marine Conservation Biology (3)
MARS 6500 Computational Methods in Marine Science (3)
MARS 6600 Geospatial Analysis in Marine Science (3)
SUST 6500 Ecological Economics and Sustainable Development (3)

ELECTIVE COURSES (6 credits)

(*A maximum of 3 credits advanced undergraduate courses (4000-level) allowed*)

Graduate Courses

BIOL 6120 Ichthyology (3)
BIOL 6170 Larval Biology (3)
CHEM 6310 Marine Natural Products (3)
ENVS 6010 Climate Change (3)
ENVS 6060 Geographical Information Systems 2: Spatial Analysis (3) *(prerequisite: ENVS 4030 GIS-1)*
MARS 6010 Toxicology and Stress Responses in Marine Communities (3)
MARS 6030 Marine Science Mammal Biology (3)
MARS 6040 Seabird Ecology and Conservation (3)
MARS 6050 Marine Ecology (3)
MARS 6090 Biological Oceanography (3)
MARS 6120 Coral Reef Ecology (3)
MARS 6210 Marine Fisheries and Management (3)
MARS 6300 Multivariate Applications in Marine Science (3)
MARS 6400 Marine Conservation Biology (3)

MARS 6500 Computational Methods in Marine Science (3)
MARS 6600 Geospatial Analysis in Marine Science (3)
MARS 6910 Current Topics in Marine Science (1)
MARS 6930 Marine Science Guest Speaker Series (1)
NSCI 6450 Teaching Undergraduate Science (3)
SUST 6500 Ecological Economics and Sustainable Development (3)

Advanced Undergraduate Courses
ENVS 4030 Applied Geographic Information Systems (3)
MARS 4100 Marine Resource Management: Culture and Sustainability (3)

General Petition
The student submits a General Petition (GP) to request that a substitute course will meet a graduation requirement. Please contact MSMS PA to file a GP.

Sample schedule for a full-time MSMS-A student – Applied-Track
(Total credits required to graduate 39)

Fall I

MARS	6060	Physical Oceanography (3)
MARS	XXXX	Focus Area Elective (3) OR MARS 6060 Geological Oc. (3)
BIOL	6090	Advanced Biometry (3)
NSCI	6110	Graduate Seminar I (Part A) (2)

Spring I

MARS	6070	Chemical Oceanography (3)
MARS	6090	Biological Oceanography (3)
XXXX	XXXX	Restricted Elective (3)
MARS	6950	Marine Science Practicum (1)

Use Summer break to begin or increase involvement in practicum project

Fall II

MARS	6060	Geological Oc. (3) OR Focus Area Elective (3)
MARS	6950	Marine Science Practicum (2)
MARS	6910	Current Topics in Marine Science (1)
XXXX	XXXX	Restricted Elective (3)

Spring II

XXXX	XXXX	Restricted Elective (3)
MARS	6910	Current Topics in Marine Science (1)
XXXX	XXXX	Focus Area Elective (3)
NSCI	6130	Communicating Marine Science (2)

Projected MSMS Course Schedule

(schedule may be modified)

Yellow - offered every year

Blue - offered every semester

Pink - offered every 2 years or as needed

FALL 2020

BIOL 6090	Advanced Biometry	Hyrenbach
ENVS 4030	Applied Geographic Info Systems	Carstenn
SUST 6500	Ecological Economics & Sustainable Dev.	Ostergaard-Klem
MARS 6020	Marine Science Field Methods	Field
MARS 6050	Marine Ecology	Kahng
MARS 6060	Geological Oceanography	Field/Nigro
MARS 6080	Physical Oceanography	Cetina-Heredia
NSCI 6110	Graduate Seminar I (part A)	Field
NSCI 6900	Master's Research (1-5 cr)	Thesis advisor
NSCI 7000	Thesis Capstone	Thesis advisor
MARS 6950	Practicum in Marine Science (MSMS-A)	Nigro
MARS 6910-1	*Topic: Guest Speakers in Marine Science*	Nigro
MARS 6120	Coral Reef Ecology	TBD

SPRING 2021

ENVS 6010	Global Climate Change	Field
ENVS 6060	Advanced Geographic Info Sys	Carstenn
MARS 6070	Chemical Oceanography	TBD
MARS 6090	Biological Oceanography	Kahng
NSCI 6112	Graduate Seminar I (part B)	TBD
NSCI 6120	Graduate Seminar II	TBD
NSCI 6130	Communicating Marine Sci	TBD
MARS 6910	*Topic: Marine Protected Areas*	Hrenbach
MARS 6950	Practicum in Marine Science (MSMS-A)	Nigro
NSCI 6900	Master's Research (1-5 cr)	Thesis advisor
NSCI 7000	Thesis Capstone	Thesis advisor
MARS 6400	Marine Conservation Biology **CANCELLED**	Hyrenbach
MARS 6030	Marine Mammal Biology	TBA
MARS 6210	Marine Fisheries & Management	Field

FALL 2021

BIOL 6090	Advanced Biometry	Hyrenbach
ENVS 4030	Applied Geographic Info Systems	Carstenn
SUST 6500	Ecological Economics & Sustainable Dev.	Ostergaard-Klem
MARS 6020	Marine Science Field Methods	Field
MARS 6050	Marine Ecology	TBD
MARS 6060	Geological Oceanography	Field//Nigro
MARS 6080	Physical Oceanography	Cetina-Heredia
MARS 6950	Practicum in Marine Science	Nigro
NSCI 6110	Graduate Seminar I (part A)	Field
NSCI 6900	Master's Research (1-6 cr)	Thesis advisor
NSCI 7000	Thesis Capstone	Thesis advisor
MARS 6950	Practicum in Marine Science (MSMS-A)	Nigro
MARS 6910	Current Topics: TBA	
MARS 6930	Guest Speakers in Marine Science Seminar	Nigro
BIOL6120	Icthyology	Korsmeyer
MARS 6500	Computational Methods in Marine Science	TBA

SPRING 2022

ENVS 6010	Global Climate Change	Field
ENVS 6060	Advanced Geographic Info Sys	Carstenn
MARS 6070	Chemical Oceanography	TBD
MARS 6090	Biological Oceanography	Kahng
NSCI 6112	Graduate Seminar I (part B)	TBD
NSCI 6120	Graduate Seminar II	TBD
NSCI 6130	Communicating Marine Sci (Track A)	TBD
MARS 6910	*Topic: Marine Protected Areas*	Hyrenbach
MARS 6950	Practicum in Marine Science (MSMS-A)	Nigro
NSCI 6900	Master's Research	Thesis advisor
NSCI 7000	Master's Thesis	Thesis advisor
BIOL 6120	Larval Biology	Unabia
MARS 6300	Multivariate Statistics in Mar Science	Hyrenbach
ENVS 6300	Modeling and Simulation	Crawford

Course Descriptions

BIOL 6090 (3)
Advanced Biometry
Biometry II begins with a review of univariate inferential statistics and introduces multivariate methods including multivariate analysis of variance, principle components analysis, multidimensional scaling, and cluster analysis.
Graphical and tabular presentation of results will be covered and students will analyze case studies provided by HPU graduate mentors. Analysis methods will be taught in the context of experimental design and hypothesis testing.

BIOL 6120 (3)
Ichthyology
Ichthyology is the study of fish biology. This course will cover areas of systematics, evolution, anatomy, physiology, behavior, ecology, biogeography, and conservation of fishes. This course will emphasize the incredible diversity of fishes and comparative study of adaptations in relation to the environment, focusing on the marine habitat.

BIOL 6170 (3)
Larval Biology
Biology of embryos, larvae and juveniles of marine animals including freshwater species with marine larvae. Topics include life history differences, evolutionary transitions between developmental modes, parental investment, and dispersal, feeding, and settlement mechanisms. Methods of sampling, identification, culture and experimental study of common invertebrate and fish larvae will be emphasized.

BIOL 6210 (3)
Neuroscience
Examination of the organization and function of the nervous system at molecular, cellular and systemic levels.

BIOL 6220 (3)
Immunology
An examination of immune system organization and function at molecular, cellular and systemic levels. Evolution and development of individual immunity, the role of the immune system in defense and disease, immune system dysfunction, and immunotherapeutic approaches to cancer and other diseases are among the topics that will be addressed.

CHEM 6310 (3)
Marine Natural Products Chemistry
Marine microbes, algae, and invertebrates are productive sources of structurally diverse, biologically active, and ecologically significant natural products. This course will cover the structures, biosyntheses, biological activities, isolation methods, and structure determination techniques for representative compounds from major structural classes including terpenoids, polyketides, alkaloids, and non-ribosomal peptides.

ENVS 4030 (3)
Applied Geographic Information Systems
The availability of digital geographic information has resulted in a need for professionals in many disciplines to use these data to benefit humanity and nature. This course will provide a practical, hands-on approach to spatial data analysis using Geographical Information Systems (GIS) as applied to the natural sciences. The project based nature of the course will encourage students to identify and analyze a spatial problem of their choice.

ENVS 6010 (3)
Global Climate Change
This course discusses the history of the Earth's climate since its formation to the present time. Focus will be placed on natural mechanisms that cause large-scale, global climate change, from the long-term to the abrupt, and how anthropogenic climate change fits into this context.

ENVS 6060 (3)
Geographical Info Systems 2
GIS is about getting answers to questions so you can make intelligent decisions. In this course you will use ArcGIS to describe the distribution of a set of features, and to discern patterns and measure relationships among these features. Topics in this course include the use of raster GIS tools for natural resource modeling and environmental analysis; the raster structure and its advantages and limitations; appropriate date and procedures; simple raster surface modeling and image integration; map algebra concepts using ArcGIS Spatial Analyst; proximity and dispersion modeling; cost surfaces and many of the vector-based analytical tools and techniques available within ArcGIS. *Prerequisite: ENVS 4030 GIS-1.*

ENVS 6200 (3)
Advanced Photovoltaic Systems Design
This is an advanced course in photovoltaic systems design for people considering a career in the solar electric industry. The detailed design of stand-alone and utility-interactive photovoltaic systems is covered with emphasis on compliance with the National Electric Code. Both residential and small commercial/institutional systems are covered (up to 30kW). This course is based, in part, on the knowledge typically required of industry practitioners as specified by the North American Board of Certified Energy Practitioners (NABCEP) and can help in preparation for the NBCEP PV installer certification exam.

ENVS 6300 (3)
Modeling and Simulation
This course introduces concepts of analytical modeling and computer simulation to MSMS-A students to improve and assist in the understanding of and decision-making about environmental systems. Topics include: introduction of modeling and simulation concepts; review of relevant math and statistics; extensive hands-on use of computer tools; and application to a variety of environmental problems.

GEOL 6010 (3)
Contaminant Hydrology *General Petition Required*
This class will cover the theory and practical considerations of fate and transport of contaminants through porous geologic materials. Topics include: physical and chemical processes governing the transport of contaminants in groundwater; multiphase flow; chemistry of organic and inorganic contaminants; microbial degradation of contaminants; monitoring and remediation site characterization; remediation technologies; analytical and numerical models to simulate groundwater flow and contaminant transport.

MARS 4100
Marine Resource Management: Culture and Sustainability (3)
Coastal communities throughout the world are highly reliant on ocean ecosystems, and threats to ocean resources places at risk the livelihoods, cultures, and economies of coastal people. In this course, students will develop strategies and leadership skills to address the key threats to ocean resources such as land-based pollution, overfishing, and climate change adaptation, and critically examine innovative solutions to these threats. Student will gain a deep understanding of cultural resource management approaches, and their application in modern policy contexts, providing a transferable skillset for emerging ocean leaders and professionals.

MARS 6010 (3)
Toxicology and Stress Responses in Marine Communities
Marine pollution is a problem that degrades habitat and exacerbates all other anthropogenic impacts to the marine environment. Using a case-study approach, this course explores 1) major types of marine pollution 2) the dynamics of specific classes of contaminants, 3) principles that influence toxicity of contaminants in major marine phyla, 4) diversity of metabolic and clearance mechanisms, and 5) impacts at the community and ecosystem levels.

MARS 6020 (3)
Marine Science Field Methods
Marine Science Research will enable students to refine methodology for ship/boat-based research and to begin collecting data using HPU's marine resources. This course is required for students requesting time on HPU's research vessel RV Kaholo for thesis projects.

MARS 6030 (3)
Marine Mammal Biology
This course covers phylogeny, anatomy, physiology, ecology and behavior of marine mammals.

MARS 6040 (3)
Seabird Ecology and Conservation
Survey of the ecology of seabirds and their role in marine ecosystems, with an emphasis on North Pacific species. Hands-on activities in the laboratory, field work, and guest lectures by resources managers will augment the course material. Students will complete an independent project using observations collected during the course activities.
Prerequisite: Graduate standing.

MARS 6050 (3)
Marine Ecology
A graduate course emphasizing ecological interactions of marine organisms with their own and other species, and the physical environment. Designed to survey not only what is known about marine ecology, but how that knowledge was acquired, the course strongly emphasizes readings from original scientific literature.

MARS 6060 (3)
Geological Oceanography
This course provides students with an in-depth survey of marine systems from a geological perspective. The topics covered will include the configuration of the ocean basins, paleo-oceanography, sea level change, oceanic sedimentary resources as well as sediment production, distribution and transport.

MARS 6070 (3)
Chemical Oceanography
Chemical principles applied to the oceans. Fundamental topics include: biogeochemical cycles and their role in determining the chemical composition of seawater, chemical reactions in seawater, use of isotopes in ocean science, primary productivity, nutrient and carbon fluxes associated with primary productivity and the biological pump, atmospheric CO_2 concentrations, and ocean pH. Additional topics focus on contemporary issues in the oceans today (e.g. ocean acidification, contamination, eutrophication and hypoxia, and carbon sequestration) and on the use of chemical techniques and isotopes to infer past changes in ocean circulation, climate, atmospheric CO_2 concentrations, and ocean pH.

MARS 6080 (3)
Physical Oceanography
An in-depth survey of marine systems from a physical perspective. Topics include physical and thermodynamic properties of seawater; temperature, salinity and density distributions, ocean heat budget, ocean effect on climate, geostrophic flow, Ekman balance, potential vorticity and Sverdrup balance, thermohaline circulation, waves, and tides.

MARS 6090 (3)
Biological Oceanography
A survey of Biological Oceanography, with an emphasis on the interactions of organisms with the physical and chemical environment, and biogeochemical variability. This course offers an introduction to pelagic organisms and their functions (focusing on population genetics, energy flow and ecosystem models), spanning from the microbial loop to fisheries, with an emphasis on past and present global changes.

MARS 6120 (3)
Coral Reef Ecology
Shallow, warm-water coral reef ecosystems are home to a fascinating diversity of organisms and an array of ecological processes that are easily observed and studied within a stone's throw from our local beaches. This course will cover the broad spectrum coral reef biology and ecology with a special emphasis on the reef ecosystem along the Hawaiian Archipelago. Topic swill include the following: coral taxonomy, anatomy, biology, symbiosis, trophic ecology, biogeography, evolutionary history, paleoceanography of Hawai'i, calcification and reef accretion, natural and anthropogenic disturbance, coral bleaching, global climate change, and ocean acidification.

MARS 6210 (3)
Marine Fisheries and Management
Overview of marine fisheries including: types of gears and practices used, life histories, recruitment and population dynamics of harvested species, and the structure and assessment of stocks. An overarching theme is the effects of fishing and climate variability, as well as the consequential management dilemmas and solutions to these problems.

MARS 6300 (3)
Multivariate Applications in Marine Science
This hands-on workshop focuses on the analysis and interpretation of multivariate analyses commonly used by marine scientists. Lectures and assignments emphasize the conceptual understanding and the practical use of these methods, with the goal of providing students with a tool-kit they will use in their research and beyond.

MARS 6400 (3)
Marine Conservation Biology
This course provides an overview of the theory and practice of marine conservation. Lectures and assignments emphasize the conceptual foundations and demonstrate the practical use of demographic analyses and computer simulations. An independent project gives students experience in critical thinking, communication skills and the use of science in effective debate.

MARS 6500 (3)
Computational Methods in Marine Science
This workshop course exposes students to the diverse computational methods used for the manipulation and analysis of large datasets using statistically robust techniques, such as randomization and bootstrapping. Students will practice these techniques using a variety of software tools and specific real-world datasets. Marine science case studies and student projects will augment the lectures and assignments.

MARS 6600 (3)
Geospatial Analysis in Marine Science
This workshop course provides an overview of the spatial analysis and associated modeling techniques used in marine science, including metrics of intensity, quantification of spatial form, and surface modeling. Students will implement these analyses using a variety of software tools and marine datasets. Real-world case studies will augment the lectures.

SUST 6500
Ecological Economics and Sustainable Development (3)
This course addresses the topic of sustainable development focusing on economics at the interface of nations and global economy. Students will complete a comprehensive study of the emerging field of ecological economics and contrast/compare it to the neoclassical economic model of development. Students will conduct an in-depth analysis of a developing nation in terms of economic development based on population, agriculture, industrial development and natural capital (ecosystem goods and services). Students will be required to propose policy options for sustainable development within a nation and provide a means by which the nation's development will move towards global sustainability.

MARS 6910 (1)
Current Topics in Marine Science Seminar
Current topics seminars are designed to expose graduate students to new developments and discoveries in marine science by taking advantage of seminars and other educational opportunities inside and outside HPU. While this flexible structure may vary with instructor and topic, most will be structured as seminar courses. Students will be assigned readings in the current literature of the course topic and required to critique the readings and relate the materials to their own research or the instructor's area of expertise.

Understanding Aquaculture and the "Blue Revolution": Implications for the future of our oceans and global food supply
The world's population is projected to reach over 9 Billion by 2050 placing an unprecedented demand on global food resources. Over the past few decades, capture fisheries production has plateaued while demand for seafood has continued to escalate. The resulting gap has been met by aquaculture production which has, for the first time in history, now surpassed capture fisheries in terms of volume. This seminar will examine the current state of global fisheries, the present status of aquaculture technologies, issues surrounding the rapid expansion of aquaculture, and the potential for aquaculture to provide much needed food for a hungry planet. We will also explore impacts of aquaculture on wild fisheries, and the sustainability of aquaculture in the context of a changing ocean environment. Each week one student will guide a discussion based primarily on 1-2 papers from the primary literature.

Biological Oceanography
Major topics in biological oceanography will be discussed using peer reviewed primary literature. Topics include: primary production, marine microbiology, zooplankton and secondary production, benthic habitats and communities, nutrient and particle fluxes associated with the oceans biological pump and with marine biogeochemical cycles. Weekly topics will be modified as necessary in response to the needs of the students.

Applications of Gas Chromatography-Mass Spectrometry (GC-MS)
This course will cover gas chromatography-mass spectrometry instrumentation and practical applications currently applied in industrial as well as research laboratories. Although this course is at the graduate level, fundamentals of analytical chemistry and quantitative chemistry will be reviewed. The basic theory of using GC-MS in separation, structural identification and quantitative analysis of biological and chemical samples will also be covered. The course is conducted as a series of lectures with hands-on practice of a newly-acquired GC-MS instrument. Applications will center on using GC-MS in analyzing common organic compounds (e.g., lipids) and compounds of interest to the students in their research. To enhance interaction and active learning there will be special lab assignments in which students will individually demonstrate their understanding on applied examples.

Topics in Fisheries and Fisheries Oceanography
Overfishing is a major problem around the world. Understanding this issue requires understanding recruitment, physical-biological interactions, life-history characteristics, population dynamics, oceanography, climate change, management issues, economics, and international issues, to name a few. This seminar will examine an array of these topics through discussions of recent literature. Each week one student will guide a discussion based primarily on 1-2 papers. Studies from a wide array of fisheries and fisheries issues will be examined.

Spatial Management of the High-Seas: from Marine Protected Areas to Ocean Zoning
This seminar is designed to complement the concurrent *Marine Conservation Biology* course (MARS 6400), will review the conceptual and technological advances that have facilitated the design and implementation of Marine Protected Areas in the open ocean, and will look ahead towards the future

developments in high-seas conservation. Students will read the scientific literature and discuss case studies designed to highlight the principles underlying the theory and practice of spatial management in the high-seas. Enrollment in MARS 6400 is not required to register for this course.

Holocene Climate Change and Projections for the Future

In this course we will explore the important and complex issue of climate variations over the Holocene and projections for the future. We will begin with an exploration of the current state of knowledge about climate variations over the last 10,000 years and our understanding of the impact of these changes on the development of human civilization. Next we will explore in detail the IPCC report on the role of carbon dioxide in recent changes in global temperature and the projections for future climate. We will look carefully at the controversy over the IPCC's use of the "Hockey Stick" curve and other controversial issues. Next we will explore the work of the more prominent "climate deniers" and evaluate the scientific issues that these individuals raise with respect to confidence in projections of future climate. Finally, each participant in the course will derive their own conclusions about the robustness of future projections based upon the material covered in the course. This course will be conducted in a seminar format where reading assignments are read carefully by all participants and then discussed in weekly meetings.

Historical Changes in Marine Ecosystems

While it is clear that human activities are modifying marine ecosystems, determining the degree of change attributed to humans is difficult. Difficulties stem from large amounts of natural variability inherent in marine ecosystems, the fact that scientists and naturalists have only been studying ecosystems for a short time period, and many of the changes that have occurred began long before scientific studies. In the last 15 years, scientists have been increasingly examining historical archives to understand past changes. The historical archives consist of sediment records, archaeological records, records by explorers and/or their accompanying naturalists, ship logs, reports for government auditors, and even genetic evidence of effective population size of some species. In this seminar, we will examine papers addressing historical changes in marine environments and ecosystems using paleo historical records. The unifying theme will be distinguishing natural environmental variability from human impacts in a diverse array of marine ecosystems.

Changing Sea Levels: Past, Present, and Future

Rising sea levels will be one of the most devastating effects of global warming on civilizations. This seminar will examine the issues surrounding future sea level rise. In order to do so, we will first focus on past changes in sea level to understand natural climate variability and its consequences on sea ice, ice sheets, and their melting rates. We will then examine the processes that affect sea level (warming of the oceans and melting of ice). And finally, take a look at future impacts, including model estimates of future sea level, physical and socio-economic impacts. Each week one student will guide a discussion based primarily on 1-2 papers.

Multivariate Statistics in R

This course will offer an introduction to the R statistics software and the packages available for performing multivariate analysis. This seminar will augment the materials discussed in the concurrent MARS 6300 (*Multivariate Statistic for Marine Science*) course. Enrollment in MARS 6300 is not required to register for this course.

Contemporary Issues in Coral Reef Ecology

This seminar will discuss the contemporary issues facing coral reef conservation. In particular, it will critically examine a collection of the most heavily cited publications in the primary literature concerning the coral reef crisis and the contemporary decline in coral reef ecosystems. The studies and data will be discussed in detail to understand the methods, assumptions, and interpretations underlying the conclusions.

MARS 6930 (1)

This is a seminar course for students in the MSMS program designed to expose graduate students to new developments and discoveries in Marine Science by taking advantage of seminars by professionals from inside and outside HPU. In this seminar, students will attend presentations by guest speakers on current marine research and management issues and will critically evaluate their format and content.

MARS 6920 (3)

Special Topics in Marine Science

The specific title, content and pre-requisites for this course will vary with instructor and need in the program. The course may be repeated when the title and content have changed.

Marine Megavertebrate Ecology & Conservation

This lecture and discussion course is designed to provide an overview of the ecology and behavior of large marine vertebrates, including bony fishes, sharks, sea turtles, seabirds, and marine mammals. This course will explore the response of these predators to oceanographic variability, their role in oceanic food webs, and the challenges associated with their management and conservation.

Spatial Ecology

This is a workshop course, designed to provide students with a background overview and operational understanding of spatial statistics and their application in a variety of research fields. Students will learn statistical techniques available for quantifying spatial patterns in ecological data using uni-variate and multi-variate statistics. Computer labs and assignments will provide students with the quantitative tool-box necessary to analyze spatially-explicit datasets. Additionally, students will complete and present an independent research project, whereby they will use a variety of tools acquired in the class to analyze their own datasets. This course is a workshop designed to help students with their individual research projects and thesis research.

MARS 6950 (3)

Marine Science Practicum

This course offers MSMS-A students the opportunity to obtain practical hands-on experience working on a research project or in an organizational employment setting. Hosting organizations will provide students with an intellectually challenging task. In turn, each practicum experience will be designed to meet the specific project goals of the host institution.

NSCI 6110 (2)

Graduate Seminar I (Part A)

Graduate students develop skills and strategies for independent research. Students may attend scientific seminars at HPU or other venues as appropriate and prepare a written and oral presentation of their proposed thesis research.

NSCI 6112 (1)

Graduate Seminar I (Part B)

This course is a continuation of NSCI 6110 Graduate Seminar I. The course is designed to help graduate students plan their thesis research project by writing a detailed proposal outlining their proposed research projects. This will include describing a problem, developing a testable hypothesis, designing a sampling and analytical plan, and developing a time-line for data collection and analysis.
Prerequisite: NSCI 6110 Graduate standing.

NCSI 6120 (1)
Graduate Seminar II-Thesis Presentation
MSMS students attend scientific seminars at HPU or other venues as appropriate, evaluate scientific presentation styles, practice presentation techniques, and present a seminar on their completed thesis research.

NSCI 6130 (2)
Communicating Marine Science
This course is designed to give graduate students the skills necessary to communicate foundational scientific concepts and specific details of their research to diverse audiences in both oral and written format. To this end, students will practice their written and oral communication skills by completing in-class activities and written assignments.

NSCI 6450 (3)
Teaching Undergraduate Science
An introduction to the pedagogy of science teaching, including lesson planning, assessment, technology, and inquiry-based methods. The modern college classroom is high tech, experiential, and flexible, to match the needs of modern students. Engagement in classroom technology and field experiences will be used to introduce students to a diversity of teaching approaches.

NSCI 6900 (1-5)
Masters Research
MSMS students do research towards their thesis under the supervision of a research mentor, contributing to the initial research proposal or to the Master's thesis. Variable credits.

NSCI 7000 (3-9)
MastersThesis
This course serves as a capstone course for the MSMS program. Students will work closely with their faculty advisor to improve their scientific writing skills. During this course students will develop a written thesis that describes their research in standard scientific format. Students are expected to enroll in this course after a majority of their thesis research is completed and as approved by the student's thesis committee. Variable credit.

Appendix: *Sample forms required during the course of your program.* ***Please request copies from your faculty advisor or the MSMS Program Administrator.***

NOMINATION OF THESIS COMMITTEE (MSMS-T ONLY)

Date: _____

_____ _____

Print Full Name (Last, First, Middle) Student ID Number

_____

Address City, State, ZIP

_____

(Area Code) Telephone Email Address

Title of Thesis:

_____ _____

Advisor (Print) Date Telephone Email

Nominated Committee

Name and Rank (or Title)	Program/Department/Place of Employment
Advisor and Committee Chair: (Print Name then Sign)	
2nd member (Print Name then Sign)	
3rd member (Print Name then Sign)	
Additional member optional: (Print Name then Sign)	

The Committee must consist of a minimum of three members, at least two of whom must be Regular Members of the HPU CNCS Faculty and hold full-time appointments. One of the two Regular Members may be replaced by an OI Affiliate Faculty member. The Chair of the Committee is the student's advisor, who must be a Regular Member of the CNCS Faculty, or, has received special permission obtained by endorsement by the Graduate Program Committee and ratification by the Dean of the CNCS (i.e. OI Affiliate Faculty). Upon nomination by the Chair of the student's Thesis Committee and approval by the Dean of the CNCS, individuals who are not Regular Members of the HPU CNCS Faculty may serve on the Thesis Committees. ***Please attach a full CV for individuals who are not Regular Members of the HPU CNCS Faculty.***

☐ Approved ☐ Disapproved _____

Brenda Jensen, PhD, Dean, College of Natural and Computational Sciences (sign and date)

College of Natural and Computational Sciences

Thesis Proposal Defense Form/Proposal Approval Form (MSMS-T ONLY)

Student name:
Presented his/her thesis entitled:
On (date):
It is the determination of the Examining Committee that the student's proposal is: **(circle one) Acceptable Unacceptable**
Faculty Advisor (Print NAME and TITLE): Signature: Date:
Committee Member (Print NAME and TITLE):
Committee Member (Print NAME and TITLE)
Committee Member (Print NAME and TITLE)
Submit this form to MSMS Program Administrator - Office of Marine Science Programs at Oceanic Institute NOTE: This *MSMS Tracking Form* is submitted after the student's committee has approved the proposal. The form is available in the Office of Marine Science Programs. The original form will be placed in the student's file.

Thesis Template: Title Page

<TITLE OF THESIS IN ALL CAPS
SECOND LINE OF TITLE IF NEEDED>

<Student Full Name as in HPU records>

A Thesis submitted in partial satisfaction of the requirements
for the degree Master of Science

in

Marine Science

College of Natural and Computational Sciences

Hawai‘i Pacific University

<Semester Year (of graduating term)>

Honolulu, Hawai‘i

Advisory Committee:

<insert name, do not include titles before or after names >, Chair
<insert name>
<insert name>

The views presented here are those of the author and are not to be construed as official or reflecting the views of Hawai‘i Pacific University

Thesis Template: Abstract

ABSTRACT

<Start abstract text here. Double-space, left justify. 350 words maximum. No underlining, boldface, or italics (exception: names of species, genera). Do not include citations or references.>

Thesis Template:
Signature Page

[Thesis Title]

by

[Full Legal Name of Author]

[Date]

This thesis is submitted in partial fulfillment of the requirements for the degree of Master of Science in Marine Science at Hawai'i Pacific University. We the undersigned have examined this document and have found that it is complete and satisfactory in all respects, and all revisions required by the final examining committee have been made.

Author _____

[Name of Author]

Committee Chair _____

[Name and Title of Committee Chair]

Committee Member _____

[Name and Title of Committee Member]

Committee Member _____

[Name and Title of Committee Member]

Committee Member _____

[Name and Title of Committee Member]

Dean _____

Brenda Jensen, PhD, Dean, College of Natural and Computational Sciences

HAWAIʻI PACIFIC UNIVERSITY

Electronic Graduate Professional Paper Release Form

Graduate Program: _____ Graduating Year: _____

Department: _____ College: _____

Graduate Professional Paper Title:

_____

Student Agreement

I hereby grant to Hawai'i Pacific University and its agents the non-exclusive license to archive and make accessible worldwide my graduate professional paper or like work, in whole or in part, in all forms of media, including but not limited to electronic media, now or hereafter known. I retain all other ownership rights to the professional paper, including but not limited to the right to use in future works (such as articles or books) all or part of this professional paper. I have either obtained permission from the owners(s) of each third party copyrighted matter to be included in my professional paper, allowing distribution or I have removed all such copyrighted matter that I lack permission to reproduce or distribute.

The version I am submitting, in **PDF (text searchable) format**, is the same as that approved by my advisor. I have obtained my advisor's approval of this professional paper, as reflected by his or her signature. By signing this form, I acknowledge that I have obtained all necessary permissions or have removed parts that I lack permission to republish.

Student (Sign): _____ Date: _____

Student (Print): _____

Graduate Advisor*(Sign): _____ Date: _____

Graduate Advisor*(Print): _____

*If not available, Program/Department Chair

Policies & Procedures are available at
https://www.hpu.edu/libraries/services/other-services/submit-graduate-papers.html

Submit this Release Form and the accompanying Graduate Professional Paper at
https://forms.hpu.edu/view.php?id=29616

MSMS-T annual student progress report forms for NSCI 6900 Research and NSCI 7000 Thesis Capstone course – completed by both advisor and student

Evaluation of NSCI 6900 Master's Research: Advisor Portion

Complete and forward to gkarr@hpu.edu and student(s).

Semester:_____ Year:_____ Units (1-6):_____

Advisor Name:_____ Student Name:_____

Students first semester enrolled in the MSMS program:_____

Expected date of completion (given current rate of progress):_____

Committee members (actual or likely):

Has the student defended the thesis proposal? _____ yes ____ no

If no, expected proposal defense date _____

Has student had a committee meeting within the last year? _____ yes ____ no

If no, expected date of next committee meeting _____

If applicable, provide reason(s) for not defending proposal and/or not having committee meeting within last year:

If no to either of these and student is a 2nd year (or above) student, state expected date of next meeting and explain why one has not taken place?

Advisor Assessment:
1: Excellent; 2: Good; 3: Satisfactory; 4: Needs improvement; 5: Unacceptable; NA- not applicable

_____ Overall student performance and progress on thesis research

_____ Student Initiative: Makes progress without specific instructions, initiates meetings, contacts advisor when uncertain about how to advance, etc.

_____ Student punctuality: Delivers work on time, arrives to meetings on time and responds to e-mails.

Quality of research done during the semester (only those that apply)

_____ Quality of lab work and/or field work

_____ Quality of data analyses/graphs

_____ Quality of writing and revising/editing writing

Advisor Time budget

Average hours per week; round to nearest 0.5 hour

_____ Meeting and working together (e.g. lab/field techniques, writing, data analyses, etc.)

_____ Reviewing student's work (e.g. editing writing, reviewing data/presentations, etc.)

_____ Other (e.g. meetings with third parties, conference preparation, etc)

Comments: (if applicable)

Noteworthy milestones accomplished:

Noteworthy goals, obstacles, or next steps:

Concerns that need addressing:

Other comments:

Reporting of NSCI 6900 Master's Research: Student Portion

Complete and forward to gkarr@hpu.edu. (You may cc: your advisor if desired but not required. Students with any additional comments or concerns may contact the program director or department chair directly)

Semester:_____ Year:_____ Units (1-6):_____

Advisor Name:_____ Student Name:_____

Students first semester in the MSMS program:_____

Goal for thesis completion:_____

Committee members (actual or likely):

If student is 2nd year or above, has the student defended the thesis proposal? _____ yes ____ no

If yes, has student had a committee meeting within the last year? _____ yes ____ no

If no to either of the above and student is a 2nd year (or above), explain why one has not taken place:

And state the expected date of proposal defense/next committee meeting _____

Title of Thesis (or thesis proposal)

Student Self-assessment:
1: Excellent; 2: Good; 3: Satisfactory; 4: Needs improvement; 5: Unacceptable; NA- not applicable

_____ Overall student performance and progress on thesis research

_____ Student punctuality: Work delivered on time, arrives to meetings on time, responds to e-mail

_____ Student Initiative (*i.e*. advancing without specific instructions, initiates meetings, contacts advisor when uncertain about how to advance, etc.)

Student/Advisor Time budget
Average hours per week; round to nearest 0.5 hour

_____ Student's time spent on all research (lab work, analyses, writing, etc.)

_____ Meeting and working with advisor in person: lab techniques, writing, data analyses, etc.

_____ Other (e.g. meetings with third parties, conference preparation, etc)

Comments: (if applicable)
Noteworthy milestones accomplished:

Noteworthy goals, obstacles, or next steps:

Concerns that need addressing:

Other comments:

Evaluation of NSCI 7000 Thesis Capstone: Advisor Portion

Complete and forward to gkarr@hpu.edu and student(s).

Semester:_____ Year:_____ Units (3-9):_____

Advisor Name:_____ Student Name:_____

Students first semester enrolled in the MSMS program:_____

Expected date of completion (given current rate of progress):_____

Committee members (actual or likely):

Has the student defended the thesis proposal? _____ yes ____ no

If no, expected proposal defense date _____

Has student had a committee meeting within the last year? _____ yes ____ no

If no, expected date of next committee meeting _____

If applicable, provide reason(s) for not defending proposal and/or not having committee meeting within last year:

If no to either of these and student is a 2nd year (or above) student, state expected date of next meeting and explain why one has not taken place?

Advisor Assessment:

1: Excellent; 2: Good; 3: Satisfactory; 4: Needs improvement; 5: Unacceptable; NA- not applicable

_____ Overall student performance and progress on thesis research

_____ Student Initiative: Makes progress without specific instructions, initiates meetings, contacts advisor when uncertain about how to advance, etc.

_____ Student punctuality: Delivers work on time, arrives to meetings on time and responds to e-mails.

Quality of research done during the semester (only those that apply)

_____ Quality of lab work and/or field work

_____ Quality of data analyses/graphs

_____ Quality of writing and revising/editing writing

Advisor Time budget

Average hours per week; round to nearest 0.5 hour

_____ Meeting and working together (e.g. lab/field techniques, writing, data analyses, etc.)

_____ Reviewing student's work (e.g. editing writing, reviewing data/presentations, etc.)

_____ Other (e.g. meetings with third parties, conference preparation, etc)

Comments: (if applicable)

Noteworthy milestones accomplished:

Noteworthy goals, obstacles, or next steps:

Concerns that need addressing:

Other comments:

Reporting of NSCI 7000 Thesis Capstone: Student Portion

Complete and forward to gkarr@hpu.edu. (You may cc: your advisor if desired but not required. Students with any additional comments or concerns may contact the program director or department chair directly)

Semester:_____ Year:_____ Units (3-9):_____

Advisor Name:_____ Student Name:_____

Students first semester in the MSMS program:_____

Goal for thesis completion:_____

Committee members (actual or likely):

If student is 2nd year or above, has the student defended the thesis proposal? _____ yes ____ no

If yes, has student had a committee meeting within the last year? _____ yes ____ no

If no to either of the above and student is a 2nd year (or above), explain why one has not taken place:

And state the expected date of proposal defense/next committee meeting _____

Title of Thesis (or thesis proposal)

Student Self-assessment:
1: Excellent; 2: Good; 3: Satisfactory; 4: Needs improvement; 5: Unacceptable; NA- not applicable

_____ Overall student performance and progress on thesis research

_____ Student punctuality: Work delivered on time, arrives to meetings on time, responds to e-mail

_____ Student Initiative (*i.e*. advancing without specific instructions, initiates meetings, contacts advisor when uncertain about how to advance, etc.)

Student/Advisor Time budget
Average hours per week; round to nearest 0.5 hour

_____ Student's time spent on all research (lab work, analyses, writing, etc.)

_____ Meeting and working with advisor in person: lab techniques, writing, data analyses, etc.

_____ Other (e.g. meetings with third parties, conference preparation, etc)

Comments: (if applicable)
Noteworthy milestones accomplished:

Noteworthy goals, obstacles, or next steps:

Concerns that need addressing:

Other comments: