



University of California, Santa Barbara  
Program Learning Outcomes

**MS in Marine Science**

***Students graduating with a MS from the Interdepartmental Graduate Program in Marine Science should be able to:***

*Core Knowledge*

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- Demonstrate a broad knowledge of marine science, including areas outside their specific areas of research. For example, students conducting research in phytoplankton ecology in the ocean would draw upon their knowledge of physical oceanography, meteorology, and chemistry oceanography to interpret field observations collected during an oceanographic cruise.
- Demonstrate a sufficient understanding of marine science to conduct supervised research.
- Formulate research questions to address significant topics and issues in marine science.

*Research Methods and Analysis*

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- Understand and be able to apply a defined scope of research methods used in marine science sufficient to conduct their research.
- Study current literature to understand and implement new research methods and analytical approaches and procedures.
- Identify and employ appropriate research procedures to conduct guided significant research.

*Pedagogy*

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- Communicate in English their research results to a range of audiences in a variety of oral presentation formats including seminars, interviews, and short presentations.
- Summarize scientific results and related materials in written English to a broad range of audiences including the lay public.
- Teach effectively in venues such as lectures, classroom demonstrations, group projects, and small group discussions.
- Manage the classroom effectively.

*Scholarly Communication*

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- Communicate in English the results of their original research with scientific peers in marine science and related disciplines.
- Understand the scientific literature and work with supervision to explain how their research results advance the state of knowledge in their research area.

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**University of California, Santa Barbara  
Program Learning Outcomes, continued**

- Judge the quality, relevance, and originality of scientific papers in their areas of specialization.
- Write effectively with collaborators at the levels found in relevant peer-reviewed journals, conference proceedings, posters, and other written formats.

*Professionalism*

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- Conduct themselves in an ethical manner in all aspects of their scientific careers.
- Understand alternate career paths, including non-academic paths, following completion of their degrees.
- Treat with consideration and respect their scientific peers, students, technicians, staff, and others involved in the scientific enterprise.

*Independent Research*

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- Conduct creative, guided scientific research projects to meet the high standards of their areas of specialization.
- With supervision produce scholarship comparable to that found in peer-reviewed articles in marine science and related disciplines.