## Master of Advanced Studies in Marine Biodiversity and Conservation

**Program Overview – 2014-2015 Academic Year**

<table>
<thead>
<tr>
<th>COURSE REQUIREMENTS</th>
<th>COURSE #</th>
<th>UNITS</th>
<th>SU</th>
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<tr>
<td>Core Course: Intro to Marine Biodiversity &amp; Conservation</td>
<td>SIO 295S</td>
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<td>Core Course: Intro to Marine Biodiversity &amp; Conservation</td>
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<tr>
<td>Core Courses: MAS-MBC Forum (normally Fall &amp; Winter)</td>
<td>MBC 258</td>
<td>2 (1 each)</td>
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<td>Core Courses: Marine Science, Economics and Policy</td>
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<td>(normally Fall &amp; Winter)</td>
<td>SIO 286 see</td>
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<td>Core Course: Economics</td>
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<td>Core Course: Policy/Communications</td>
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<td>Elective Courses: (check departments for quarterly</td>
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<td>Core Course: Capstone Independent Study Project (normally</td>
<td>MBC 296</td>
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**TOTAL UNITS:** 48

**Note:** No more than 12 undergraduate units (i.e., courses numbered below 100) may apply to the MAS MBC degree.

Core courses are taught at Scripps Institution of Oceanography. Other courses are taught at Scripps unless otherwise indicated by department (Economics, School of International Relations and Pacific Studies (IRPS), Communications, etc.)
MAS-MBC Core Course Requirements:

SIO 295S. Introduction to Marine Biodiversity and Conservation—Seminar (8)
Lectures on ecological, economic, social, and legal issues related to marine biodiversity and case studies on socioeconomic and legal issues. Students are expected to attend field trips at sea and to various sites around San Diego County as part of the corequisite course. Students who have taken SIO 295 may not receive credit for SIO 295S. Prerequisites: consent of instructors. Corequisites: SIO 295LS and MAS students only.

SIO 295LS. Introduction to Marine Biodiversity and Conservation—Lab (8)
Laboratory work on major biological taxa, field trips on biodiversity in situ, computer labs for informatic tools. Students are expected to attend field trips at sea and to various sites around San Diego County as part of the course. Students who have taken SIO 295L may not receive credit for SIO 295LS. Prerequisites: consent of instructor. Corequisites: SIO 295S and MAS students only.

MBC Courses (all required)

MBC 258. MAS Forum (1 unit) Fall 2014, Winter 2014 and in some cases, Spring 2015 (Register 1 unit each quarter. Total 2 units required)
Instructor: Phaedra Doukakis (or Richard Norris)
Students attend weekly meetings to discuss and prepare for Capstone Independent Research Project work.

MBC 296. MAS Capstone (6 units) Spring 2015
Instructor: Richard Norris or Capstone Chair under respective section ID. Students will attend weekly meetings with committee members to review project progress. Students also attend practice sessions to prepare for Capstone Symposium scheduled near the end of spring quarter 2013.

SIO 286 Marine Science, Economics and Policy
SIO 286 Marine Science, Economics and Policy will be taught under 3 different topics in 2014-15: Marine Law and Policy; Approaches to Marine Conservation; and Coastal Wetland Ecology, Conservation and Management. Student must enroll in SIO 286 a minimum of two times (4 units each for a total 8 units). All students must enroll in SIO 286 Marine Law and Policy taught in the fall. Students have the option of taking all three SIO 286 (4) unit courses and having SIO 286 Marine Law count towards the 4-unit Policy & Communications requirement listed below.

SIO 286. Marine Science, Economics and Policy (4 units) Fall 2014
Marine Law and Policy
Instructor: Kathryn Mengerink. Meet 3 hours weekly (IGPP 4301 Fridays 1-4)
This class will provide an overview of international and U.S. ocean law and policy, so that you can consider the policy ramifications of your work, and understand the broader framework in which the federal and state governments make science-based decisions that affect the conservation and sustainability of ocean resources. This course will be a seminar course that combines lectures with student presentations. The first six classes will be lectures to provide you with an overview of the legal field and key U.S. environmental laws that regulate our oceans and coasts. Reading materials will be assigned including statutes, case law, regulations, and law and policy articles to accompany the lectures. In the final four weeks, you will choose from a variety of ocean law and policy topics. Students will give 20-minute presentations and facilitate discussions addressing major issues in ocean law and policy and the key laws and policies used to address them.

AND one of the following

Wetlands
Instructor: Lisa Levin
This course covers the biology and ecology of wetland ecosystems as well as management. Students are required to complete a wetlands management project during the course.

Approaches to Marine Conservation  
**Instructor:** Phaedra Doukakis-Leslie, Octavio Aburto  
This course covers some of the major approaches to marine conservation and compares the utility of the approaches in Mexican and US waters. Much of the class focuses on fisheries in terms of their management and impact on marine ecosystems.

SIO 189/289 Pollution, Environment and Health  
**Instructor:** Hamdoun  
The goal is to understand the scope of the pollution problem facing the planet. Students will learn the properties of chemicals in the environment and survey the biological mechanisms that determine their accumulation and toxicity. Graduate students will also be required to write a research paper.

**Economics**  
Students must enroll in one (4 unit) Economics course listed below, or choose other Economics course approved by the Academic Coordinator. Undergraduate courses must be upper division, and students will be expected to produce an additional graduate level paper or project as assigned by the instructor.

**Econ 281. Economics of the Environment (4 units) Fall 2014**  
**Instructor:** Mark Jacobsen, Economics  
Environmental issues from an economic perspective. Relation of the environment to economic growth. Management of natural resources, such as forest and fresh water. Policies on air, water, and toxic waste pollution. International issues such as ozone depletion and sustainable development.  
Note: MAS MBC students will attend the general lectures along with the undergraduates enrolled in Econ 131 TTH (also called *Economics of the Environment*). An additional 1 hour weekly session will be held for MAS MBC students only.

Or

**Economics 145 Economics of Ocean Resources (4 units) Winter 2015, Spring 2014 (Alalawi)**  
**Instructor:** Dale Squires

**Policy & Communications**  
Students must enroll in one (4 unit) Policy or Communications course listed below, or choose other Policy or Communications course approved by the Academic Coordinator.

**SIO 286. Marine Science, Economics & Policy (4 units) Fall 2014**  
**Marine Law and Policy (See description above)**  
**Instructor:** Kathryn Mengerink  
This course will count toward the Policy & Communications requirement only if the two other SIO 286 courses listed above are taken.

**OR one of the following:**

**ANSC 169 Culture and the Environment**  
**ANTH 285 Grantwriting**  
**COGR 280 Communication Media**  
**SIO 209. Community Based Science**  
**SIO 209. Climate Change, Dimensions**  
**SIO 180/292 Communicating Sciences to Informal Audiences**  
**SIO 287A Marine Microbial Ecology**  
**SIO 296 Special Topics**  
**MGT 103 Product Marketing and Management**  
**MGT 478 Marketing Communication**  
**MGT 489 Topics in Marketing: Social Venturing**  
**SIO 296 Organizational Leadership**
IRCO 400 Policy Making Processes

**Electives as approved by Academic Coordinator**

ECON 281 Economics of the Environment (if Economics requirement fulfilled by a different class)
LTWR 122 Writing for the Sciences
MGT 459 Topics in Innovation Social Venturing
ANSC 169 Culture and the Environment
SIO 132 Intro to Marine Biology
SIO 134 Intro to Biological Oceanography
SIO 204 Acoustics
SIO 249 Special Topics Writing a Scientific Paper
SIO 255A Paleobiology and History of Life
SIO 270A Fisheries Oceanography
SIO 274 Natural History Below the Tide
SIO 278 Ocean Biosciences
SIO 280 Biological Oceanography
SIO 281 Marine Physiology
SIO 283 Phycology
SIO 286 Marine Science, Economics and Policy (if more than two 4 units are taken)
SIO 294 Biology of Fishes
SIO 296 Special Topics Marine Biology
SIO 299 Research