Ocean and Coastal Resources (OCRE) graduates often operate at the interface between government and businesses with scientific operations. They can navigate the regulatory path from either the side of the developer or the permitting agency. This degree program prepares students with regard to the economic, environmental and social issues related to the development of marine and coastal resources, while providing them with the scientific background needed to understand these issues. These resources include fisheries, oil and gas, ocean mining, beach sand, wetlands and others. The OCRE degree provides a foundation in oceanography, geology, chemistry, biology and physics with additional coursework in geological and biological sciences, along with economics, policy and management. The OCRE curriculum is oriented toward the societal and environmental impacts of ocean science. Many of the resource development issues in today’s world center around environmental pollution, sustainable development, biological diversity, fisheries and mariculture or oil and gas development. There is good demand for trained entry-level personnel from both government and industry for individuals who understand and can use scientific information in the planning and management process, but who are not themselves bench or field scientists. A significant number of our graduates chooses to enter graduate programs in resource management or policy.

Students in OCRE may choose to establish a minor field of study, for example in Economics (TAMU) or in Maritime Administration (TAMUG) through completion of credits as outlined in the available minors curriculum pages. A minor in Ocean and Coastal Resources is available for students of other majors. Obtaining a minor from a department located at TAMU in College Station with coursework completed in Galveston is possible. An advisor in MARS can help you select courses and facilitate the minor approval process through another department.

## Program Requirements

### First Year

<table>
<thead>
<tr>
<th>Semester</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td></td>
</tr>
<tr>
<td>ENGL 104</td>
<td>Composition and Rhetoric 3</td>
</tr>
<tr>
<td>GEOL 101</td>
<td>Principles of Geology 4</td>
</tr>
<tr>
<td>&amp; GEOL 102</td>
<td>and Principles of Geology Laboratory 4</td>
</tr>
<tr>
<td>BIOL 111</td>
<td>Introductory Biology I 4</td>
</tr>
<tr>
<td>MARS 101</td>
<td>Marine Science Matters 2 1</td>
</tr>
<tr>
<td>MATH 142</td>
<td>Business Calculus 1 or Engineering Mathematics I 4</td>
</tr>
<tr>
<td>or MATH 151</td>
<td></td>
</tr>
<tr>
<td>Spring</td>
<td></td>
</tr>
<tr>
<td>BIOL 112</td>
<td>Introductory Biology II 4</td>
</tr>
<tr>
<td>MATH 141</td>
<td>Finite Mathematics 1 or Engineering Mathematics II 3</td>
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<tr>
<td>or MATH 152</td>
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</tr>
<tr>
<td>OCNG 251</td>
<td>Oceanography 4</td>
</tr>
<tr>
<td>&amp; MARS 252</td>
<td>and Introductory Marine Science Laboratory 2</td>
</tr>
<tr>
<td>POLS 207</td>
<td>State and Local Government 3</td>
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#### Second Year

<table>
<thead>
<tr>
<th>Semester</th>
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<tbody>
<tr>
<td>Fall</td>
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</tr>
<tr>
<td>CHEM 101</td>
<td>Fundamentals of Chemistry I 4</td>
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<tr>
<td>&amp; CHEM 111</td>
<td>and Fundamentals of Chemistry Laboratory I 1</td>
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<tr>
<td>ECON 202</td>
<td>Principles of Economics 3</td>
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<tr>
<td>MARS 280</td>
<td>Coastal and Ocean Resources 2 3</td>
</tr>
<tr>
<td>MARS 281</td>
<td>Sophomore Seminar in Marine Sciences 2 1</td>
</tr>
<tr>
<td>PHYS 218</td>
<td>Mechanics or College Physics 4</td>
</tr>
<tr>
<td>or PHYS 201</td>
<td></td>
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<tr>
<td>Spring</td>
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<tr>
<td>CHEM 102</td>
<td>Fundamentals of Chemistry II 4</td>
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<tr>
<td>&amp; CHEM 112</td>
<td>and Fundamentals of Chemistry Laboratory II 1</td>
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<tr>
<td>COMM 203</td>
<td>Public Speaking 3</td>
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<tr>
<td>ECON 203</td>
<td>Principles of Economics 3</td>
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<tr>
<td>MARS 210</td>
<td>Marine Geography 2 3</td>
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<tr>
<td>American history (<a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a>)</td>
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<tr>
<td>Professional electives 2,4</td>
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#### Third Year

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<tbody>
<tr>
<td>Fall</td>
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<tr>
<td>MARA 363</td>
<td>The Management Process 3</td>
</tr>
<tr>
<td>MARS 350</td>
<td>Advanced Computer Applications 2 2</td>
</tr>
<tr>
<td>OCNG 420</td>
<td>Biological Oceanography 2 4</td>
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<tr>
<td>American history (<a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history</a>)</td>
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<tr>
<td>Professional elective 2,4</td>
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<tr>
<td>Creative arts (<a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a>)</td>
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<tr>
<td>Spring</td>
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<tr>
<td>POLS 206</td>
<td>American National Government 3</td>
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<tr>
<td>MARS 310</td>
<td>Field Methods in Marine Sciences 2,5 3</td>
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<tr>
<td>STAT 303</td>
<td>Statistical Methods 3</td>
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<tr>
<td>Professional elective 2,4</td>
<td>3</td>
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<tr>
<td>Creative arts (<a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a>)</td>
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#### Fourth Year

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<tr>
<th>Semester</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Fall</td>
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</tr>
<tr>
<td>MARS 325</td>
<td>Introduction to GIS for Marine Sciences 2 3</td>
</tr>
<tr>
<td>Select one from: 2</td>
<td>4</td>
</tr>
<tr>
<td>MARS 425</td>
<td>Coastal Wetlands Management 3</td>
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<tr>
<td>&amp; MARS 426</td>
<td>and Coastal Wetlands Delineation Laboratory 4</td>
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<tr>
<td>MARB 430</td>
<td>Coastal Plant Ecology 3</td>
</tr>
<tr>
<td>MARS 491</td>
<td>Research in Marine Sciences 2 1</td>
</tr>
<tr>
<td>POLS 347</td>
<td>Politics of Energy and the Environment or Peak Oil, Global Warming and Resource Scarcity 3</td>
</tr>
<tr>
<td>or MARS 432</td>
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</tbody>
</table>
Professional elective $^{2,4}$ 3

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<tr>
<th>Semester Credit Hours</th>
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**Spring**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MARS 481</td>
<td>Seminar</td>
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</tr>
<tr>
<td>MARS 430 or MARS 431</td>
<td>Geological Oceanography-Plate Tectonics $^{2,6}$ or Geological Oceanography-Earth's Climate</td>
<td>3</td>
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</table>

**Elective**

| Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) | 3 |

**Professional elective $^{2,4}$** 6

<table>
<thead>
<tr>
<th>Semester Credit Hours</th>
<th>16</th>
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</table>

Total Semester Credit Hours 120

All electives must be chosen in consultation with, and approved by, the student’s academic advisor. Unless courses are specifically listed, see University Core Curriculum at http://core.tamu.edu/ for a listing of course options for Communication, Mathematics, Life and Physical Sciences, Language Philosophy and Culture, Creative Arts, American History, Government and Political Sciences and Social and Behavioral Sciences. The 6-hour University Core Curriculum requirement for International and Cultural Diversity may be met with courses used to satisfy other degree requirements.

1. Either MATH 151, which is preferred for a science-oriented career path, or MATH 142 may be taken. Credit will not be given for both MATH 151 and MATH 142. For the second math course, either MATH 152 or MATH 141 may be taken. Depending upon the math sequence selected, the number of credit hours will vary by 1 or 2 credits. The total number of hours for the degree must still be at least 120, so the difference can be made up with professional electives, MARS 484, MARS 491 or MARS 485.

2. Indicates required courses in the Ocean and Coastal Resources major. These courses will be used to compute the major GPR. Also, if any upper level MARS or OCNG elective courses are taken, they will be used in the major GPR.

3. The total hours may be increased if the student is required to take remedial math, remedial English, foreign language or International and Cultural Diversity courses.

4. Recommended professional electives include, but are not limited to: CHEM 316, CHEM 318, COMM 449, MARA 470, MARB 320, MARB 340, MARB 345, MARB 350, MARB 423, MARB 438, MARB 445, MARS 305, MARS 306, MARS 330, MARS 370/GEOG 370, MARS 410, MARS 412, MARS 415, MARB 423, MARS 435, MARS 440, MARS 484, MARS 491 or MARS 489.

5. Field Experience may also be met with MARB 300 plus one credit hour of a field oriented lab course.

6. Designated writing intensive course. If both MARS 430 and MARS 431 are taken, one can be used as a professional elective.