

# KU B.S. Marine Science: Biology Requirements

The ocean covers over 71% of our planet. The Marine Science major focuses on the interactions between biology, chemistry, geology, and physics in the world's oceans. The laboratory and field-intensive interdisciplinary core curriculum prepares students for graduate school and careers in industry, government, fisheries, marine biology, oceanography, marine engineering, marine geology, pharmaceuticals, and natural resource development and protection. Recent marine science graduates work in diverse fields as biologists at zoos, aquariums, research labs, and national parks, as technicians at pharmaceutical and microbiology laboratories, as marine technicians on research ships, and as a video producer for NASA Earth. Students majoring in Marine Science choose from two concentration areas: Marine Biology and Oceanography.

*Note that all students must achieve 120 undergraduate credits and a minimum 2.0 overall GPA to graduate. The final GPA requirement for Marine Science: Biology is 2.0.*

## **Required Marine Science Courses – 27 credits**

MRSC 110 Intro. to Oceanography (3 credits)

MRSC 226 Marine Biology (3 credits)

MRSC Method-Intense Field Course (3 credits) *Methods courses are offered at the Chincoteague Bay Field Station, Wallops Island, VA and must be approved by the MRSC Program Coordinator.*

MRSC 210 Sophomore Seminar (1 credit)

MRSC 364 Physical Oceanography (3 credits)

MRSC 366 Marine Geology (3 credits)

MRSC 380 Senior Seminar (2 credits)

MRSC 370 Research in Mar. Sci. or MRSC 390 Internship in Mar. Sci. (3 credits)

MRSC Elective (3 credits)

MRSC Elective (3 credits)

*Courses in this category may be used to satisfy the minimum of 9 credit hours that must be taken at the Chincoteague Bay Field Station, Wallops Island, VA.*

## **Required Biology Core Courses – 14 credits**

BIOL 104 Principles of Biology (4 credits) *(must earn a C or better)*

BIOL 106 Intro. to Zoology (4 credits)

BIOL 224 Applied Environmental Microbiology (3 credits)

BIOL 216 Genetics (3 credits)

## **Other Required Courses – 18 to 19 credits**

CHEM 102 General Chemistry II (4 credits)

CHEM 214 Organic Chemistry I or CHEM 204 Fundamentals of Organic Chemistry (4 credits)

GEOG 274 Geographic Information Systems I (3 credits)

PHYS 42 General Physics II (4 credits) or PHYS 102 Physics II (4 credits)

MATH 106 Trigonometry (3 credits) or MATH 115 Precalculus (3 credits) or MATH 181 Calculus I (4 credits)

## **Directed General Education Courses – 12 credits**

*These courses are required for the major and satisfy the general education requirement*

*“Understanding Science and Technology.”*

CHEM 100 General Chemistry I – Category C1(4 credits)

GEOL 100 Physical Geology – Category C2 (4 credits)

PHYS 40 General Physics I (4 credits) or PHYS 100 Physics I – Category C3 (4 credits)

## **University Electives – 16 credits**

*Students may use a combination of 1, 3, and 4 credit courses to complete 16 credits of University Electives*

**Program Plan Code:** BS\_MARF\_BIOL

**Effective Date:** Spring 2020



# B.S. Marine Science: Biology Major Check Sheet

Student Name:

Student ID Number:

This check sheet provides a mechanism for students and advisors to keep track of a student's progress in the program. Please refer to the program requirements for more details regarding options.

*Note that all students must achieve 120 undergraduate credits and a minimum 2.0 overall GPA to graduate. The final GPA requirement for Marine Science: Biology is 2.0.*

## Required Marine Science Core Courses – 27 credits

MRSC 110 Intro. to Oceanography	3 credits	Grade:
MRSC 226 Marine Biology	3 credits	Grade:
MRSC Method-Intense Field Course	3 credits	Grade:
MRSC 210 Sophomore Seminar	1 credit	Grade:
MRSC 364 Physical Oceanography	3 credits	Grade:
MRSC 366 Marine Geology	3 credits	Grade:
MRSC 380 Senior Seminar	2 credits	Grade:
MRSC 370 Research in Mar. Sci. <i>or</i> MRSC 390 Internship in Mar. Sci.	3 credits	Grade:
MRSC	3 credits	Grade:
MRSC	3 credits	Grade:
<b>Total Credits</b>	27 total credits	

## Required Biology Core Courses – 14 credits

BIOL 104 Principles of Biology ( <i>must earn a C or better</i> )	4 credits	Grade:
BIOL 106 Intro. to Zoology	4 credits	Grade:
BIOL 224 Applied Environ. Micro.	3 credits	Grade:
BIOL 216 Genetics	3 credits	Grade:
<b>Total Credits</b>	14 total credits	

## Other Required Courses – 18 to 19 credits

CHEM 102 General Chemistry II	4 credits	Grade:
CHEM 214 Organic Chemistry I <i>or</i> CHEM 204 Fundamentals of Organic Chemistry	4 credits	Grade:
GEOG 274 Geo. Info. Sys. I	3 credits	Grade:
MATH 106 Trigonometry <i>or</i> MATH 115 Precalculus <i>or</i> MATH 181 Calculus I	3-4 credits	Grade:
PHYS 42 General Physics II <i>or</i> PHYS 102 Physics II	4 credits	Grade:
<b>Total Credits</b>	18-19 total credits	

## Directed General Education Courses

CHEM 100 General Chemistry I (Category C1)	4 credits	Grade:
GEOL 100 Physical Geology (Category C2)	4 credits	Grade:
PHYS 40 <i>or</i> 100 Physics I (Category C3)	4 credits	Grade:

**University Electives – 15 to 16 credits**

Course 1:	credits	Grade:
Course 2:	credits	Grade:
Course 3:	credits	Grade:
Course 4:	credits	Grade:
Course 5:	credits	Grade:
Course 6:	credits	Grade:
<b>Total Credits</b>	15-16 total credits	

**Summary of Graduation Requirements**

Total credits from major courses	<b>59-60</b>
Total credits from general education program	<b>42-45</b>
Total credits from university electives	<b>15-16</b>
<b>Minimum total credits to graduate</b>	<b>120</b>
<b>Minimum overall GPA</b>	<b>2.0</b>
<b>Minimum GPA in major program</b>	<b>2.0</b>

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# B.S. Marine Science: Biology 8-Semester Planner

Student Name:

Student ID Number:

*Each semester listed below provides information including course categories, typical credit hours (CH.), and space to add specific course selections. This planner is a suggested path. Consult with your advisor regarding your unique plans and interests as you make choices about your schedule.*

## **First Semester Plan**

Gen Ed	FYSM 100	3 CH.	Selection: FYSM100 -
Gen Ed	Gen Ed Course	3 CH.	Selection:
Major	BIOL 104	4 CH.	Selection:
Major	MRSC 110	3 CH.	Selection:
<b>Total</b>		<b>13 CH.</b>	

## **Second Semester Plan**

Gen Ed	Gen Ed Course	3 CH.	Selection:
Gen Ed	GEOL 100 (Category C2)	4 CH.	Selection:
Major	MATH 106, 115 or 181	3 CH.	Selection:
Major	BIOL 106	4 CH.	Selection:
<b>Total</b>		<b>14 CH.</b>	

## **Third Semester Plan**

Gen Ed	Gen Ed Course	3 CH.	Selection:
Gen Ed	CHEM 100 (Category C1)	4 CH.	Selection:
Gen Ed	PHYS 40 or 100 (Category C3)	4 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Major	MRSC 210	1 CH.	Selection:
<b>Total</b>		<b>15 CH.</b>	Selection:

## **Fourth Semester Plan**

Gen Ed	Gen Ed Course	3 CH.	Selection:
Major	CHEM 102	4 CH.	Selection:
Major	PHYS 42 or 102 Physics II	4 CH.	Selection:
Major	BIOL 226	3 CH.	Selection:
<b>Total</b>		<b>14 CH.</b>	

***Fifth Semester Plan***

Gen Ed	Gen Ed Course	3 CH.	Selection:
Gen Ed	Gen Ed Course	3 CH.	Selection:
Major	CHEM 214 or 204	4 CH.	Selection:
Major	BIOL 224	3 CH.	Selection:
<b>Total</b>		<b>13 CH.</b>	

***Sixth Semester Plan***

Gen Ed	Gen Ed Course	3 CH.	Selection:
Elective	University Elective	4 CH.	Selection:
Major	BIOL 216	3 CH.	Selection:
Major	MRSC 364 or 366	3 CH.	Selection:
<b>Total</b>		<b>13 CH.</b>	

***Seventh Semester Plan***

Gen Ed	Gen Ed Course	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Major	GEOG 274	3 CH.	Selection:
Major	MRSC 370 or 390	3 CH.	Selection:
<b>Total</b>		<b>15 CH.</b>	

***Eighth Semester Plan***

Gen Ed	Gen Ed Course	3 CH.	Selection:
Gen Ed	Gen Ed Course	3 CH.	Selection:
Elective	University Elective	3 CH.	Selection:
Major	MRSC 364 or 366	3 CH.	Selection:
Major	MRSC 380	2 CH.	Selection:
<b>Total</b>		<b>14 CH.</b>	

***Additional Notes:***

1. In addition to the above, three summer field courses at the Chincoteague Bay Field Station are required for graduation and can be used to fulfill the Methods-Intensive course, as well as the MRSC electives within the Core. These can be scheduled any summer following freshman year with 1, 2 or all 3 courses in any given summer.
2. The following courses are offered alternate spring semesters: MRSC 364 Physical Oceanography (odd) and MRSC 366 Marine Geology (even).

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