B.S. IN BIOLOGY - MARINE SCIENCE CONCENTRATION

Curriculum

Code	Title	Credits
GENERAL EDUCATION REQUIREMENTS (https://catalog.wcupa.edu/undergraduate/general-education-requirements/)		
Academic Foundations		
First Year Experience requirement		4
English Composition requirement		6-7
Mathematics requirement		3-4
MAT 121	Introduction to Statistics I	
or MAT 125	Introduction to Statistics and Probability	
Interdisciplinary requirement		3
Diverse Communities requirement		3
Ethics requirement		3
Distributed Disciplinary Foundations		
Science requirement		6-8
CHE 103	General Chemistry I	
PHY 130	General Physics I	
Behavioral & Social Science requirement		6
Humanities requirement		6
Arts requirement		3
ADDITIONAL BACCALAUREATE REQUIREMENTS (https://catalog.wcupa.edu/undergraduate/general-education-requirements/)		
University Requirements		
Writing Emphasis requirement		9
Speaking Emphasis requirement		9
Degree Requirements		
Capstone requirement		1-15
MAJOR REQUIREMENTS		
Core Courses		
BIO 110	General Biology I [1]	4
BIO 111	General Biology II [1]	4
BIO 210	Genetics [1]	3
BIO 210L	Genetics Lab [1]	1
BIO 211	Cell Biology [1]	4
CHE 103	General Chemistry I	3
CRL 103	General Chemistry I Lab	1
CHE 104	General Chemistry II	3
CRL 104	General Chemistry II Lab	1
CHE 231	Organic Chemistry I	4
CRL 231	Organic Chemistry I Lab	2
CHE 232	Organic Chemistry II	3
PHY 130	General Physics I [2]	4
or PHY 170	Physics I	
PHY 140	General Physics II [2]	4
or PHY 180	Physics II	
MAT 121	Introduction to Statistics I	3
or MAT 125	Introduction to Statistics and Probability	
Select one semester of calculus		3-4
Other Required Courses		
BIO 270	Ecology [1]	3
BIO 312	Marine Botany [1]	3
BIO 313	Marine Biology [1]	3
BIO 310	Biostatistical Applications	3
ESS 330	Introduction to Oceanography	3
Marine Science Electives		
Selected under advisement from the list below, (6 credits must be chosen at the 300- or 400-level) from the Department of Biology approved list		9
WCU Courses:		
BIO 387	Invertebrate Zoology	
BIO 453	Marine Mammals	
GEO 324	Intro to Geographic Information Systems	
ESS 332	Advanced Oceanography	
Cheyney University Courses: SLF 330, 332 [3]		
Wallops Island/Marine field station courses: Courses are to be chosen from two or more topics including, but not limited to, marine or wetlands ecology, ichthyology, invertebrate zoology, marine mammals, ornithology, marine molecular biology, and biotechnology. (Courses completed at the Wallops Island Marine Science Consortium and other marine field stations will be approved on an individual basis and will require adviser and departmental approval.)		
Capstone Requirement		
Select one of the following: [1]		3
BIO 490	Capstone: Seminar in Biology [4]	
BIO 491	Capstone: Independent Research in Biology [4]	
BIO 492	Capstone: Professional Development in Biology [4]	
Total Minimum Credits Required		**120**

1. Courses must be passed with a grade of C- (70%) or better.
2. The recommended Physics sequence is PHY 130 & PHY 140. Students may substitute the PHY 170 & PHY 180 sequence, but PHY 130 may not be used as a prerequisite for PHY 180 and PHY 170 may not be used as a prerequisite for PHY 140.
3. Check the Cheyney University Catalog for more information about the courses
4. This course fulfills the Capstone requirement.

Sample Course Plan

To track their individual degree progress, students are advised to access their Degree Audit via RamPortal regularly. For more information, visit the Degree Audit FAQ webpage (https://www.wcupa.edu/academicEnterpriseSystems/student-system-modernization/degree-audit-faqs.aspx).

The following is a sample suggested course sequence for this program; course offerings and availability are not guaranteed. Students should consult their academic advisor with any questions.

Course	Title	Credits
Year One		
Semester One		
BIO 110	General Biology I	4
CHE 103 & CRL 103	General Chemistry I and General Chemistry I Lab	4
WRT 120	Effective Writing I	3
FYE 100X	First Year Experience	4
	Credits	**15**
Semester Two		
BIO 111	General Biology II	4

CHE 104 & CRL 104	General Chemistry II and General Chemistry II Lab	4
MAT 121 or MAT 125	Introduction to Statistics I [1] or Introduction to Statistics and Probability	3
WRT 2XX	200-Level WRT Course	3
Behavioral & Social Science Gen Ed		3
	Credits	**17**
Year Two		
Semester Three		
BIO 210 & 210L	Genetics and Genetics Lab [2]	4
CHE 231 & CRL 231	Organic Chemistry I and Organic Chemistry I Lab	6
Humanities & Ethics Gen Ed		3
Arts Gen Ed		3
	Credits	**16**
Semester Four		
BIO 211	Cell Biology [2]	4
BIO 313	Marine Biology	3
CHE 232	Organic Chemistry II	3
MAT 145 or MAT 143 or MAT 161	Calculus for the Life Sciences or Brief Calculus or Calculus I	3-4
Behavioral & Social Science Gen Ed		3
	Credits	**16-17**
Year Three		
Semester Five		
BIO 270	Ecology [2]	3
PHY 130	General Physics I	4
ESS 330	Introduction to Oceanography	3
Diverse Communities Gen Ed		3
Directed Elective		3
	Credits	**16**
Semester Six		
BIO 310	Biostatistical Applications	3
BIO 312	Marine Botany	3
PHY 140	General Physics II	4
Interdisciplinary Gen Ed		3
Speaking Emphasis Gen Ed		3
	Credits	**16**
Year Four		
Semester Seven		
Marine Science Elective [3]		3
Marine Science Elective [3]		3
Humanities Gen Ed		3
Upper-Level Directed Elective		3
	Credits	**12**
Semester Eight		
BIO 490 or BIO 491 or BIO 492	Capstone: Seminar in Biology or Capstone: Independent Research in Biology or Capstone: Professional Development in Biology	3
Marine Science Elective [3]		3
Directed Elective		3
Directed Elective		3
	Credits	**12**
	Total Credits	**120-121**

[1] Students should take Statistics (MAT 121 or MAT 125) in the first year.

[2] All required 200-level Biology courses should be completed by the end of Semester #5.

[3] Marine Science electives may need to be taken during the summer or winter terms when taken off campus (i.e., at a Marine Science Field Station).