

**I. CATALOG INFORMATION**

- A. Discipline: BIOLOGY
- B. Subject Code and Number: BIOL M03
- C. Course Title: Marine Life and Its Environment

- D. Credit Course units:  
 Units: 4  
 Lecture Hours per week: 3  
 Lab Hours per week : 3  
 Variable Units : No

- E. Student Learning Hours:  
 Lecture Hours:  
     Classroom hours: 52.5 - 52.5  
 Laboratory/Activity Hours:  
     Laboratory/Activity Hours 52.5 - 52.5  
**Total Combined Hours** in a 17.5 week term: 105 - 105

F. Non-Credit Course hours per week \_\_\_\_\_

G. May be taken a total of:  1  2  3  4 time(s) for credit

H. Is the course co-designated (same as) another course: No  Yes   
 If YES, designate course Subject Code & Number: \_\_\_\_\_

I. Course Description:

Examines marine organisms and their relationships to their environment while emphasizing intertidal and offshore life forms. Includes an investigation of behavior, ecology, morphological and physiological adaptations and environmental relationship to humans.

J. Entrance Skills

\*Prerequisite: No  Yes  Course(s)  
 \_\_\_\_\_

\*Corequisite: No  Yes  Course(s)  
 \_\_\_\_\_

Limitation on Enrollment: No  Yes   
 \_\_\_\_\_

Recommended Preparation: No  Yes  Course(s)  
 \_\_\_\_\_

Other: No  Yes   
 \_\_\_\_\_

K. Other Catalog Information:

**II. COURSE OBJECTIVES**

Upon successful completion of the course, a student will be able to:

		<b>Methods of evaluation will be consistent with, but not limited by, the following types or examples.</b>
1	explain the essential elements of life, major hypotheses for life's history, and mechanisms for the diversification of life in the ocean.	Quizzes Tests Lab practicals Projects Papers
2	compare and contrast the development, life cycles, and anatomical and physiological characteristics of major taxa of organisms associated with the ocean.	Quizzes Tests Lab practicals Projects Papers
3	evaluate the relationships of organisms to each other and their specific marine environments.	Quizzes Tests Projects Papers
4	describe, identify key characteristics, and classify representative specimens down to representative phyla of the marine biota.	Quizzes Tests Lab practicals Projects Papers
5	apply the processes of scientific inquiry, phylogenetic analysis, and experimental design to the diversity of marine organisms.	Quizzes Tests Lab practicals Projects Papers

**III. COURSE CONTENT**

<b>Estimated %</b>	<b>Topic</b>	<b>Learning Outcomes</b>
<b>Lecture</b> (must total 100%)		
12.00%	Basic biological concepts: Macromolecules Cell structure and transport processes Energy flow Carbon metabolism and cycling	1, 2, 3, 4,

	Reproduction -- asexual and sexual Inheritance patterns Evolutionary theory: adaptation Classification of organisms	5
20.00%	Marine organisms Prokaryotic Algae Protozoans Fungi Invertebrate animals Vertebrate fishes Reptiles, birds, mammals	1, 2, 3, 4, 5
10.00%	Basic ecological principles Energy and nutrient flow Community structure: species interactions, symbioses, larval ecology, intertidal succession Zonation: eutrophication	1, 2, 3, 4, 5
10.00%	Human impact on and exploitation of marine environments Oceanic resources Pollution Habitat destruction Conservation issues Resource management Human use of the ocean Mariculture Oceans and culture	1, 2, 3, 4, 5
4.00%	Scientific process: Methodology and writing Current topics in marine science	1, 2, 3, 4, 5
6.00%	Basic oceanography: Geography Geology	1, 3, 5
6.00%	Water chemistry: Density Temperature Salinity Dissolved nutrients Vertical stratification	1, 3, 5
8.00%	Impact of climatic features: Winds Tides Current patterns El Nino Upwelling	1, 3, 5
24.00%	Marine ecosystems Intertidal: hard bottom, soft bottom Subtidal Estuaries Continental shelf Coral reefs, kelp forests, mangrove forests Epipelagic Mesopelagic Deep sea	1, 2, 3, 4, 5
<b>Lab (must total 100%)</b>		

6.00%	Physical properties	1, 3, 5
6.00%	Diversity of life	1, 2, 3, 4, 5
6.00%	Classification	1, 2, 3, 4, 5
6.00%	Marine bacteria	1, 2, 3, 4, 5
6.00%	Plakton and algae	1, 2, 3, 4, 5
6.00%	Marine plants	1, 2, 3, 4, 5
6.00%	Invertebrates I -Sponges -Cnidarians -Worms	1, 2, 3, 4, 5
10.00%	Invertebrates II -Molluscs -Arthropods -Echinoderms	1, 2, 3, 4, 5
12.00%	Fish dissection Fish adaptations Fish identification	1, 2, 3, 4, 5
6.00%	Mammals and birds	1, 2, 3, 4, 5
6.00%	Field study -Beach	1, 2, 3, 4, 5
6.00%	Field study -Tide pool	1, 2, 3, 4, 5
6.00%	Field study -Fouling community	1, 2, 3, 4, 5
6.00%	Field study -Marine museum	1, 2, 3, 4, 5
6.00%	Evolution	1, 2, 3, 4, 5

#### IV. TYPICAL ASSIGNMENTS

##### A. Writing assignments

Writing assignments are required. Possible assignments may include, but are not limited to:	
1	laboratory reports.
2	laboratory practicals on fish dissections and identifications.
3	projects and papers on such topics as the habitation in tide pools observed on field trips.

**B. Appropriate outside assignments**

Appropriate outside assignments are required. Possible assignments may include, but are not limited to:	
1	conduct research on various marine ecosystems.
2	participate in field trip to study tidal pools.
3	locate literature and internet studies on current concerns regarding coral reefs.

**C. Critical thinking assignments**

Critical thinking assignments are required. Possible assignments may include, but are not limited to:	
1	identify types of marine algae.
2	examine the impact of climatic features such as wind, tide, current patterns on marine life.
3	evaluate the relationships of organisms to each other and their specific marine environments.

**V. METHODS OF INSTRUCTION**

Methods of instruction may include, but are not limited to:

- Distance Education – When any portion of class contact hours is replaced by distance education delivery mode (Complete DE Addendum, Section XV)
- Lecture/Discussion
- Laboratory/Activity
- Other (Specify) Dissections
- Optional Field Trips
- Required Field Trips

**VI. METHODS OF EVALUATION**

Methods of evaluation may include, but are not limited to:

- |                                                          |                                                             |                                                         |
|----------------------------------------------------------|-------------------------------------------------------------|---------------------------------------------------------|
| <input checked="" type="checkbox"/> Essay Exam           | <input checked="" type="checkbox"/> Classroom Discussion    | <input checked="" type="checkbox"/> Skill Demonstration |
| <input checked="" type="checkbox"/> Problem Solving Exam | <input checked="" type="checkbox"/> Reports/Papers/Journals | <input checked="" type="checkbox"/> Participation       |
| <input checked="" type="checkbox"/> Objective Exams      | <input checked="" type="checkbox"/> Projects                | <input checked="" type="checkbox"/> Other (specify)     |

Practicals in a lab setting

**VII. REPRESENTATIVE TEXTS AND OTHER COURSE MATERIALS**

Wisheart, Gary, et al. A Photographic Atlas of Marine Biology. Morton, 2012.

Morrissey, John, et al. Introduction to the Biology of Marine Life. 11th ed. Jones and Bartlett, 2016.

**VIII. STUDENT MATERIALS FEES** No  Yes**IX. PARALLEL COURSES**

College	Course Number	Course Title	Units
San Francisco State Univ.	BIOL 160	Marine Biology	3
CSU Long Beach	BIOL 153	Introduction to Marine Biology	3
CSU Humboldt	BIOL 255	Marine Biology	3
UC Davis	EVOL&EC 12	Life in the Sea	3

**X. MINIMUM QUALIFICATIONS****Courses Requiring a Masters Degree:**

Master's degree in any biological science OR bachelor's degree in any biological science AND master's degree in biochemistry, biophysics, or marine science OR the equivalent.

**XI. ARTICULATION INFORMATION****A. Title V Course Classification:**

1. This course is designed to be taken either:

- Pass/No Pass only (no letter grade possible); or  
 Letter grade (P/NP possible at student option)

2. Degree status:

Either  Associate Degree Applicable; or  Non-associate Degree Applicable

**B. Moorpark College General Education:**

1. Do you recommend this course for inclusion on the Associate Degree General Education list?

Yes:  No:  If YES, what section(s)?

- A1 - Natural Sciences - Biological Science  
 A2 - Natural Sciences - Physical Science  
 B1 - Social and Behavioral Sciences - American History/Institutions  
 B2 - Social and Behavioral Sciences - Other Social Behavioral Science  
 C1 - Humanities - Fine or Performing Arts  
 C2 - Humanities - Other Humanities  
 D1 - Language and Rationality - English Composition  
 D2 - Language and Rationality - Communication and Analytical Thinking  
 E1 - Health/Physical Education  
 E2 - PE or Dance  
 F - Ethnic/Gender Studies

**C. California State University(CSU) Articulation:**1. Do you recommend this course for transfer credit to CSU? Yes:  No:

2. If YES do you recommend this course for inclusion on the CSU General Education list?

Yes:  No:  If YES, which area(s)?

- A1  A2  A3  B1  B2  B3  B4   
 C1  C2  D1  D2  D3  D4  D5   
 D6  D7  D8  D9  D10  E

D. University of California (UC) Articulation:

1. Do you recommend this course for transfer to the UC? Yes:  No:

2. If YES do you recommend this course for the Intersegmental General Education Transfer Curriculum (IGETC)? Yes:  No:

IGETC Area 1: English Communication

- English Composition  
 Critical Thinking-English Composition  
 Oral Communication

IGETC Area 2: Mathematical Concepts and Quantitative Reasoning

- Mathematical Concepts

IGETC Area 3: Arts and Humanities

- Arts  
 Humanities

IGETC Area 4: Social and Behavioral Sciences

- Anthropology and Archaeology  
 Economics  
 Ethnic Studies  
 Gender Studies  
 Geography  
 History  
 Interdisciplinary, Social & Behavioral Sciences  
 Political Science, Government & Legal Institutions  
 Psychology  
 Sociology & Criminology

IGETC Area 5: Physical and Biological Sciences (mark all that apply)

- Physical Science Lab or Physical Science Lab only (non-sequence)  
 Physical Science Lecture only (non-sequence)  
 Biological Science

- Physical Science Courses
- Physical Science Lab or Biological Science Lab Only (non-sequence)
- Biological Science Courses
- Biological Science Lab course
- First Science course in a Special sequence
- Second Science course in a Special Sequence
- Laboratory Activity
- Physical Sciences

IGETC Area 6: Language other than English

- Languages other than English (UC Requirement Only)
- U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)
- U.S. History, Constitution, and American Ideals (CSU Requirement ONLY)

**XII. REVIEW OF LIBRARY RESOURCES**

- A. What planned assignment(s) will require library resources and use?

The following assignments require library resources:

Using the Library's print and online resources, conduct research for projects such as identifying the biodiversity in a local estuary.

- B. Are the currently held library resources sufficient to support the course assignment?

YES:  NO:

If NO, please list additional library resources needed to support this course.

**XIII. PREREQUISITE AND/OR COREQUISITE JUSTIFICATION**

BIOL M03: Not Applicable

**XIV. WORKPLACE PREPARATION**

BIOL M03: Not Applicable

**XV. DISTANCE LEARNING COURSE OUTLINE ADDENDUM**

BIOL M03: Not Applicable

**XVI. GENERAL EDUCATION COURSE OUTLINE ADDENDUM**

**General Education Division of Learning** [check all applicable boxes]:

- Natural Sciences
  - Biological Science
  - Physical Science
- Social and Behavioral Sciences
  - American History/Institutions
  -



- Other Social Science
- Humanities
  - Fine or Performing Arts
  - Other Humanities
- Language and Rationality
  - English Composition
  - Communication and Analytical Thinking
- Health/Physical Education
- Ethnic/Women's Studies

**Check either Option 1 or Option 2**

- OPTION #1:** Moorpark College has already received approval from the CSU and/or UC systems for this course to fulfill a GE requirement. Note: This option applies only to technical revisions and updated courses.
- OPTION #2:** Moorpark College has not received approval from the CSU and/or UC systems for this course to fulfill a GE requirement. This option applies to all new and substantively revised courses.

**XVII. STUDENT MATERIALS FEE ADDENDUM**

BIOL M03: Not Applicable

**XVIII. REPEATABILITY JUSTIFICATION TITLE 5, SECTION 55041**

BIOL M03: Not Applicable

**XIX. CURRICULUM APPROVAL**

Course Information:

Discipline: BIOLOGY

Discipline Code and Number: BIOL M03

Course Revision Category: Outline Update

Course Proposed By:

Originating Faculty Jana Johnson 09/12/2018

Faculty Peer: Paul Kores 09/13/2018

Curriculum Rep: Beth Miller 09/12/2018

Department Chair: Audrey Chen 09/12/2018

Division Dean: Carol Higashida 09/13/2018

Approved By:

Curriculum Chair: Jerry Mansfield 02/08/2019

Executive Vice President: \_\_\_\_\_

Articulation Officer: Letrisha Mai 02/06/2019

Librarian: Mary LaBarge 02/04/2019

Implementation Term and Year: Fall 2019

Approval Dates:

Approved by Moorpark College Curriculum Committee: 02/19/2019

Approved by Board of Trustees (if applicable): \_\_\_\_\_

Approved by State (if applicable): 02/27/2019