College of San Mateo
Course Outline

Department: Ocen  Number: 100
Course Title: Oceanography  Units: 3
Hours/Week: Lecture: 3  Lab: By Arrangement: 1
Length of Course  Grading
☒ Semester-long  ☒ Letter
☐ Short course (Number of weeks ___)  ☐ Credit/No Credit
☐ Open entry/Open exit  ☐ Grade Option (letter or Credit/No Credit)

1. Prerequisite (Attach Enrollment Limitation Validation Form.)
   - none -

2. Corequisite (Attach Enrollment Limitation Validation Form.)
   - none -

3. Recommended Preparation (Attach Enrollment Validation Form.)
   - none -

4. Catalog Description (Include prerequisites/corequisites/recommended preparation.)

   100 Oceanography (3) Three lecture hours plus one hour by arrangement per week plus one or more field trips may be required. Introduction to marine geology, chemistry, and biology. Includes the hydrologic cycle and properties of sea water and marine organisms; currents, waves, tides, coastal processes, and ecology of the ocean; continental drift; and seafloor spreading. (AA: Area E5a, CSU: Area B1/Area B2, UC: Area 5A)

5. Class Schedule Description (Include prerequisites/corequisites/recommended preparation.)

   Introduction to marine geology, chemistry and biology. Includes the hydrologic cycle and properties of sea water and marine organisms; currents, waves, tides, coastal processes, and ecology of the ocean; continental drift and seafloor spreading. One or more field trips may be required. Plus one hour by arrangement per week. (CSU/UC)

6. Student Learning Outcomes (Identify 1-6 expected learner outcomes using active verbs.)

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

   Comprehend, interpret and analyze written and oral information about the scientific method in the study of natural science
Demonstrate an understanding of the geographic, geologic, chemical, physical and biological concepts of ocean science
Effectively describe multiple lines of evidence that support our knowledge of plate tectonics, seawater and its movement, coastal environments or the marine ecosystem
Solve quantitative problems associated with navigation and/or plate motion
Interpret graphical representations of bathymetry, tides, salinity, temperature or pressure
Evaluate the logic, validity and relevance of information in assessing evidence in plate tectonics and/or earth structure
Draw appropriate conclusions from the application of scientific principles to predict future trends based upon current analytical data

7. **Course Objectives** *(Identify specific teaching objectives detailing course content and activities. For some courses, the course objectives will be the same as the student learning outcomes. If this is the case, please simply indicate this in this section).*

   - same as SLO's -

8. **Course Content** *(Brief but complete topical outline of the course that includes major subject areas [1-2 pages]. Should reflect all course objectives listed above. In addition, you may attach a sample course syllabus with a timeline.)*

   Introduction to the scope of the course
   Philosophy of science & the scientific method
   Geography of the oceans
   Bathymetry of the oceans
   Navigation & Field methods

   Geological oceanography
   Structure and composition of the earth
   Evidence supporting continental drift
   Evidence supporting plate tectonics
   Seafloor spreading & volcanism
   Features at plate boundaries
   Other seafloor features
   Structure of the ocean basin floor
   Sediments and sedimentation

   Physical & Chemical oceanography
   Water and Seawater Properties
   Seawater Composition
   Stratification
   Atmospheric circulation
   Air-Sea interaction
   Ocean circulation
   Waves
   Tides
   Beaches & Coastal Processes

   Biological oceanography
   Life in the oceans
   Classification of marine life
   Energy transfer
   Marine resources & management
9. **Representative Instructional Methods** (Describe instructor-initiated teaching strategies that will assist students in meeting course objectives. Include examples of out-of-class assignments, required reading and writing assignments, and methods for teaching critical thinking skills.)

   If hours by arrangement are required by this course, indicate the additional instructional activity which will be provided during this time.

   The following methodologies are appropriate. Individual faculty will use whatever mix of these they find most effective in the presentation of each topic.

   Lecture presentation supplemented by visual aids (transparencies, photos, powerpoint presentations, movies, maps), in-class demonstration, instructor-led class discussion, hands-on experience with geologic or biologic samples, in-class review games, required reading of text, required homework on key terms and concepts, required current event summary, optional homework reviewing terms & concepts and field trips (optional or required). One hour by arrangement per week is required for additional instruction and self-testing utilizing the textbook's CD-ROM and publisher's website.

10. **Representative Methods of Evaluation** (Describe measurement of student progress toward course objectives. Courses with required writing component and/or problem-solving emphasis must reflect critical thinking component. If skills class, then applied skills.)

   Instructors have considerable discretion in determining course grades, but the department expects in-class tests to account for the majority of the final grade. Homework, quizzes, in-class assignments, and projects typically combine to account for the non-test portion of the grade. Methods of evaluation include written tests with both objective questions (true/false, multiple choice, matching) and short-essay questions, in-class exercises, homework, pop-quizzes, current event projects, presentations, worksheets and participation in class discussions.

11. **Representative Text Materials** (With few exceptions, texts need to be current. Include publication dates.)

   or

Prepared by:

(Signature)

Email address:  hand@smccd.edu

Submission Date:  

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