



# NORTHWEST FLORIDA STATE COLLEGE

100 College Boulevard, E. • Niceville, FL 32578-1347 • (850) 678-5111 • [www.nwfsc.edu](http://www.nwfsc.edu)

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## **OCE-1001C: Introduction to Oceanography**

Course Reference Number (CRN): 20104 Winter-Spring SEMESTER 2026

(Traditional In-Class Format, 4 Credit Hours with Laboratory, No prerequisites)

### **COURSE INFORMATION**

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- Course OCE-1001C, Course Reference Number (CRN): 20104, 4 Credit Hours with lab
- Class Location (Campus/Building/Room): Niceville, Bldg. 350, Room 237
- Class Modality: Traditional, in-class format with laboratory.
- Class Days: Monday, Wednesday
- Class Times: 12:30-2:50 AM
- Online Classroom with Gradebook: [Canvas class shell](#)
- Final Exam: Monday, 4 May 2026

### **INSTRUCTOR INFORMATION**

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- Professor: Dr. Jon Bryan
- Email: [bryanj@nwfsc.edu](mailto:bryanj@nwfsc.edu)
- Phone: 850-729-5246 (office)
- Office Hours: M,W: 8:00-9:00; T,Th: 8:00-11:00
- Office Location (Campus/Building/Room): Niceville Campus, Bld. 350, Room 217

### **INSTRUCTOR COMMUNICATION**

Your NWFSC email is the official communication medium of the College. Please check your College email regularly for any class and College notifications. The instructor will respond within 36 hours, Monday through Friday.

### **COURSE DESCRIPTION (STATE OF FLORIDA)**

#### **OCE X001 – Introduction to Oceanography**

USING THE SCIENTIFIC METHOD, CRITICAL THINKING SKILLS, AND DATA ANALYSIS, THIS COURSE WILL EXAMINE THE FUNDAMENTAL PROCESSES OF THE OCEAN SYSTEM, COMPOSED OF AN ATMOSPHERE, HYDROSPHERE, LITHOSPHERE, AND BIOSPHERE, THROUGH TIME. THE COURSE WILL ALSO EXPLORE INTERACTIONS BETWEEN THESE SPHERES, INCLUDING CRITICAL ANALYSIS OF SCIENTIFIC THEORIES AND EMPHASIZE OCEANIC CONNECTIONS WITH HUMANITY. STUDENT LEARNING OUTCOMES: • STUDENTS WILL USE CRITICAL THINKING TO RECOGNIZE THE RIGOROUS STANDARDS OF SCIENTIFIC THEORIES. • STUDENTS WILL ANALYZE AND SYNTHESIZE OCEANOGRAPHIC DATA TO DRAW SCIENTIFICALLY VALID CONCLUSIONS. • STUDENTS WILL RECOGNIZE THE DIFFERENT TIME SCALES

ASSOCIATED WITH DIFFERENT OCEAN PROCESSES. • STUDENTS WILL DESCRIBE INTERACTIONS BETWEEN HUMANS AND THE OCEAN REALM. • STUDENTS WILL APPLY THEIR UNDERSTANDING OF OCEANOGRAPHIC PRINCIPLES TO VARIOUS MARINE ISSUES.

### **COURSE DESCRIPTION (NWFSC)**

An interdisciplinary survey of all sciences pertaining to the study of the global ocean. This includes the four traditional subfields of oceanography—geological, chemical, physical, and biological oceanography. Laboratory exercises involve map and ocean chart reading, ocean sediments, bathymetry, salinity, ocean circulation, coastal environments and processes, the identification of major groups of common marine organisms, and marine ecology.

### **Student Learning Outcomes (State of Florida):**

- Students will use critical thinking to recognize the rigorous standards of scientific theories.
- Students will analyze and synthesize oceanographic data to draw scientifically valid conclusions.
- Students will recognize the different time scales associated with different ocean processes.
- Students will effectively communicate the importance of the interactions between humans and the ocean realm.
- Students will apply their understanding of these oceanographic principles to various marine issues.

### **COURSE-LEVEL STUDENT LEARNING OUTCOMES (NWFSC)**

**O-1:** The student be familiar with the major subfields of oceanography (i.e., geological, chemical, physical, biological), the history of ocean science, the geography of the global ocean, and the interpretation of ocean charts and bathymetric maps.

**O-2:** The student will demonstrate familiarity with the origin of the Earth and its ocean (hydrosphere), and the Theory of Plate Tectonics and origin of ocean basins.

**O-2:** The student will examine and classify a variety of ocean floor sediments and understand their importance in the reconstruction of the geologic history of ocean basins.

**O-3:** The student will review the geology of the ocean floor, including coastal environments and landforms.

**O-4:** The student will demonstrate an understanding of the Theory of Plate Tectonics and its role in the creation and destruction of ocean basins.

**O-5:** The student will demonstrate understanding of the chemical composition and properties of seawater, the dynamics of ocean salinity and chemical equilibrium, and biogeochemical cycles.

**O-6:** The student will review the structure and general circulation of the atmosphere and its role in ocean circulation and climate, major surface ocean currents and the origin of geostrophic currents (gyres), the stratified nature of ocean water, and the origin of thermohaline circulation.

**O-7:** The student will review the nature and classification of ocean waves, the origin and nature of tides, and various types of coastal circulation (longshore drift, cell circulation, estuarine circulation).

**O-8:** The student will demonstrate a basic understanding of major types of ocean-atmospheric interactions such as hurricanes and the Southern Oscillation.

**O-9:** The student will survey the major causes of sea level change—temporary and secular (long-term), regional and eustatic (global)—and review sea level change through time.

**O-10:** The student will demonstrate understanding of the morphology and classification of higher taxa of marine organisms, with an emphasis on the ecologic role of each in benthic and pelagic communities.

**O-11:** The student will understand the nature of primary productivity, trophic structure, and limiting factors in of ocean ecology, with special emphasis on coral reef and deep sea ecosystems.

**O-12:** THE STUDENT WILL DEMONSTRATE UNDERSTANDING OF VARIOUS ISSUES IN MARINE CONSERVATION AND THE ECONOMIC USE OF OCEANS, INCLUDING THE PROTECTION OF RARE AND ENDANGERED SPECIES, THE ROLE OF MARINE SANCTUARIES

#### **COURSE PREREQUISITES**

No prerequisites.

#### **COURSE MATERIALS**

**Textbook:** Sverdrup, K, & Kudela, R, 2024, *Investigating Oceanography*, 4th Edition. McGraw-Hill. Laboratory materials will be provided in class.

#### **ASSIGNMENTS, GRADING SCHEME AND PROCEDURES**

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Your grade will be based on six, in-class, hour-long, 100-point exams (600 points total), AND up to ± 200 points of laboratory exercises. All grades will be posted on *Canvas* ASAP. All exams, including the final exam, are *not* cumulative. The final exam is simply exam number 6 and has no more point value than the others. Each exam has an extensive study guide to help you prepare and is usually given to you at least a week before the exam. You may not drop any test grade. Exams consist of multiple choice and short-answer questions. No make-up tests will be given without proof that you could not attend class on test day. Contact your instructor *in advance* if there is a problem!

This course includes traditional class lectures and laboratory exercises. Most labs are hands-on activities utilizing a variety of oceanographic materials and specimens. The point value of each lab will vary, but we will complete approximately 200 points ( + or -) of lab. No labs may be dropped, and labs will not be accepted past the due date without permission.

#### **Grading Scheme**

<b>Grade</b>	<b>Range</b>
A	90 – 100 %

B	80 – 89 %
C	70 – 79 %
D	60 – 69 %
F	59 and less %

### ELECTRONIC DEVICES IN CLASS

Electronic devices must not distract from learning. Courtesy to the professor and other students requires that phones be on vibrate or silent mode during class. No student should initiate conversations, including texts, during class activities. Use of electronic communication devices during examinations or other graded activities may constitute grounds for disciplinary action; such devices must be completely out of sight during exams or other assessments. Where emergency or employment situations require access to electronic communication services, arrangements may be made in advance with the instructor.

**Phones and Computers in Class:** Personal phones and laptop computers have proven to be distractions from the classroom experience. They prevent the user from paying full attention, can easily distract students in the immediate vicinity, and their use is disrespectful to the instructor. Except for immediately before or after class, or during a class break, use of cellular phones and laptop computers is not permitted during class. They should be put in a backpack, purse, etc., so as to not be seen or used in any way. *Students observed using personal phones when class is in session are subject to the immediate loss of points (5 points per use), that will be tallied on the class roster or seating chart during class.* These 5 points are not percentage points of an overall grade but are raw points (equivalent to dropping 5 points on a 100-point exam). Every use may result in the additional loss of points. If emergency or employment situations require access to a phone during class, arrangements may be made in advance with your instructor.

### Class Schedule

<u>Date</u>	<u>Topic</u>	<u>Text Chapters</u>
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#### PART 1—INTRODUCTION & GEOLOGICAL OCEANOGRAPHY

Jan 12	Introduction/Global Ocean/ <b>Exercise 1—Ocean-Geography</b>	1
14	Map & Chart Reading/ <b>Exercise 2—Intro to Maps/Exercise 3—Ocean Charts</b> History of Marine Science (online)	
19	(Monday) MLK, Jr. Day— <i>College Closed</i>	
21	Survey of the Ocean Floor <b>Exercise 4—The Ocean Floor/ Exercise 5—Bathymetry</b>	3
26	Ocean Sediments/ <b>Exercise 6—Marine Sediments</b>	3

	28	Earth's Interior/Continental Drift & the Theory of Plate Tectonics/ Plate Tectonics & Origin of Ocean Basins	2
<b>PART 2—CHEMICAL OCEANOGRAPHY</b>			
Feb	2	Properties of Water/ <b>Exercise 7—<i>Properties of Seawater</i></b>	4
	4	Ocean Salinity	5
	9	<b>Exercise 8—<i>Ocean Salinity</i></b>	
	11	<b>Exam 1</b> (Intro & Geological Oceanography)/TBA	
<b>PART 3—PHYSICAL OCEANOGRAPHY</b>			
	16	Biogeochemical Cycles	5,15,16
	18	Atmospheric Structure & Circulation/Ocean Structure & Circulation/ <b>Exercise 9—<i>Ocean Circulation</i></b>	6,7
	23	Waves & Breakers/Tides/ <b>Exercise 10—<i>Tidal Patterns in the Gulf of Mexico</i></b>	8,9
	25	Sea Level Change, Past & Present	16
<b>PART 4—COASTAL OCEANOGRAPHY</b>			
Mar	2	Coastal Environments/Coastal Classification/Barrier Islands/ Wetlands/Estuaries	10
	4	<b>Exam 2</b> (Chemical Oceanography)/Ocean-Atmosphere Interactions	6,7
	9	Coastal Processes/Estuarine Circulation	10
	14	<b>Exercise 11—<i>Coastal Oceanography</i></b> /FIELDTRIP	
	19-20	Spring Break— <i>College Closed</i>	
<b>PART 5—BIOLOGICAL OCEANOGRAPHY I—SURVEY OF MARINE LIFE</b>			
	23	Intro to Taxonomy/Domains & Kingdoms/Monerans/Phytoplankton, Macroalgae, Marine Plants, Protistan Benthos & Zooplankton	
	25	<b>Exam 3</b> (Physical Oceanography)/ <b>Exercise 12—<i>Cyanobacteria, Phytoplankton, Macroalgae &amp; Marine Plants, Protozoa</i></b> / <b>Exercise 13—<i>Gulf Plankton Tow</i></b>	
	30	Survey of Marine Macroinvertebrates	14
Apr	1	<b>Exercise 14—<i>Non-Molluscan Marine Macroinvertebrates</i></b> / <b>Exercise 15—<i>Marine Mollusks</i></b>	
	6	Survey of Marine Vertebrates (Past & Present)	13
	8	<b>Exam 4</b> (Coastal Oceanography)/TBA <b>Exercise 16—<i>Marine Vertebrates</i></b> / <b>Exercise 17—<i>Marine Life of the Past</i></b>	
<b>PART 6—BIOLOGICAL OCEANOGRAPHY II—MARINE ECOLOGY</b>			
	13	Marine Environments & Niches/Marine Ecosphere/Marine	

	Biogeography/ <b>Exercise 18—Marine Environments &amp; Habitats</b>	11,12
15	Primary Productivity & Trophic Structure of Marine Communities	13
20	Reef Ecology/ <b>Exercise 19—Reef-Building Organisms</b>	14
22	<b>Exam 5</b> (Biological Oceanography I—Marine Life)/TBA	
27	Deep Sea Ecology/Chemosynthetic Communities	13,14
29	TBA	
May 4	<b>Exam 6</b> (Biological Oceanography II—Marine Ecology)	

## STUDENT EXPECTATIONS AND RESOURCES

NWFSC aims for excellence in education and scholarly pursuits. Campus policies and procedures support this goal by protecting the health, safety, welfare, and property of the College and its students. To view all campus policies, please see the [college catalog](#). Several essential policies are provided below with the corresponding link to the full policy for your review.

NWFSC POLICY	DESCRIPTION
<a href="#">Academic Integrity</a>	<p>Students are expected to behave responsibly as members of the College community and be honest and forthright in their academic endeavors. This includes the use of generative AI tools. Using genAI in any form to substantially complete an assessment is prohibited, except where explicitly allowed by the instructor.</p> <p>Any time the instructor suspects there is a violation of Academic Integrity or there is a reported Academic Integrity Incident, the instructor is required to investigate it as outlined in the Academic Integrity section of the handbook (linked to the left). The instructor will provide information to the student about the procedure, the complaint, the findings, and any consequence imposed.</p> <p>Students are also expected to behave professionally and refrain from disrupting other students' learning environments.</p>
<a href="#">Accommodations</a>	The <a href="#">Accommodation Resource Center</a> at Northwest Florida State College is committed to providing equal access and opportunities for educational success to all students with disabilities as guided by the American Disabilities Act and other disability-related laws.
<a href="#">Attendance</a>	Regular attendance and participation in the course is expected. All students should adhere to the College calendar. For dual enrolled students, high school holidays may not be College holidays.

<a href="#"><u>Tutoring Services</u></a>	Tutoring services are available in person and online.
<a href="#"><u>Counseling Services</u></a>	All actively enrolled students can receive an initial assessment and up to five therapeutic sessions with a Behavioral Health provider at no cost to the student.
<a href="#"><u>Student Code of Conduct</u></a>	Students are expected to adhere to the rules, regulations, and policies outlined in the Student Code of Conduct.
<a href="#"><u>Student Complaints</u></a>	NWFSC desires to resolve student grievances, complaints, and concerns expeditiously, fairly, and in an amicable manner. A student who desires to resolve a grievance may initiate the resolution process using the information in the link provided to the left.
<a href="#"><u>Student Rights and Responsibilities</u></a>	All students should review the Student Rights and Responsibilities section of the Student Handbook to understand their role as a student.

## OTHER IMPORTANT INFORMATION

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### **EMERGENCY COLLEGE CLOSURE**

This course's schedule, requirements, and procedures are subject to change in the event of unusual or extraordinary circumstances. If the College closes for inclement weather or another emergency, any exams, presentations, or assignments previously scheduled during the closure period will automatically be rescheduled for the first regular class meeting held once the college reopens. If changes to graded activities are required, students will not be penalized due to the adjustments but will be responsible for meeting revised deadlines and course requirements.

### **ACADEMIC CONTINUITY PLAN**

NWFSC is dedicated to protecting the health and well-being of its students, staff, and faculty. The College is dedicated to working with faculty and students to ensure timely course and program completion during emergencies. In the event of a College closure, the format of this course may be modified to enable completion of the course through other means, including but not limited to online course delivery through online classrooms. Check your RaiderNet College email and LMS classroom online for any updates.

### **WELCOME TO CLASS**

Thank you for choosing NWFSC for your education—and welcome to class!