Oceanography Lab Syllabus **Fall 2022** **Mira Costa College**

OCEA 101L - INTRODUCTORY OCEANOGRAPHY (LABORATORY) – CRN 1402 – Tuesday Lab
3 Laboratory Hours; 1 Unit; Letter Grade; Student may petition for Credit/No Credit

PREREQUISITES: Previous completion or current enrollment in the parent course OCEA101

MEETING TIMES: 08/23/2022 - 12/13/2022 – Tuesdays 1:30pm to 4:20pm – Room OC4529

INSTRUCTOR: Ray Rector

CONTACT: phone# -760-942-9201, e-mail – **oceanprof@seascisurf.com**

OFFICE HOURS: Tuesdays and Thursdays 4:30 pm to 5:15 pm; Room OC4529

LABORATORY TEXTBOOK/MANUAL: None required for this lab. However, student will be required to print out lab worksheets from a website. Details about required lab worksheets are found in this syllabus.

CLASSROOM RESOURCE WEBSITE: www.seascisurf.com/ Click the **MiraCosta Ocea101 Tu Lab** link

COURSE DESCRIPTION: This course is designed to accompany the Oceanography 101 lecture course. It offers hands-on experience with oceanographic materials and techniques in both the laboratory and field. Topics include reading navigational charts and topographic maps, interpreting sea floor features, analysis of seawater chemistry, and study of waves and tides using the Internet. On field trips, students will study waves, currents, and coastal processes, and examine organisms in coastal marine habitats and at an aquarium. Students will also participate in a half-day oceanographic floating lab voyage.

STUDENT LEARNING OUTCOMES: OCEA101L Core Competencies:

Course student learning outcomes (CSLOs) describe what students should be able to do upon successful completion of OCEA 101L. These are assessed using exams, projects, and other assignments.	**MCC core competencies** are broad general education outcomes that demonstrate real-world skills. Each CSLO is mapped to at least one core competency—this means you gain experience with these skills in OCEA 101L.
SLO #1: Use and interpret information on nautical maps and charts, including contour lines, map scales, latitude and longitude, identification of seabed features, bathymetric profiles, and application of navigational skills to nautical problems.	• Inquiry, analysis and independent thinking • Critical Thinking • Written Communication Skills • Integration of knowledge • Teamwork and collaborative skills
SLO #2: Analyze seawater samples for salinity and oxygen content, and interpret the results using oceanographic concepts.	• Inquiry, analysis and independent thinking • Critical Thinking • Written Communication Skills • Integration of knowledge • Teamwork and collaborative skills
SLO #3: Evaluate the dynamics of waves, tides and ocean currents, and interpret the results using oceanographic concepts.	• Inquiry, analysis and independent thinking • Critical Thinking • Written Communication Skills • Integration of knowledge • Teamwork and collaborative skills
SLO #4: Evaluate biological data from coastal marine communities, and apply oceanographic concepts to the data.	• Inquiry, analysis and independent thinking • Critical Thinking • Written Communication Skills • Integration of knowledge • Teamwork and collaborative skills
SLO #5 Interpret oceanographic observations made in the field, including analysis of coastal bluff erosion, measurement and analysis of ocean waves, assessment of factors controlling beach size, and analysis of data collected during a half-day ocean expedition.	• Inquiry, analysis and independent thinking • Critical Thinking • Written Communication Skills • Integration of knowledge • Teamwork and collaborative skills

CLASS ENROLLMENT NOTES: It is the student's responsibility to add, drop, or withdraw from classes before the deadlines stated in the class schedule. Petitions to add, drop, or withdraw after the deadline will not be approved without written proof of circumstances beyond the student's control, which made her/him unable to meet the deadline. Lack of money to pay fees is not considered an extenuating circumstance. Students anticipating difficultly in paying fees before the deadline should check with the Financial Aid Office about sources of funds or other alternatives for which they may be eligible. If you decide to withdraw from this course, you are reminded to do so before the following deadlines: **September 2, 2022** is the last day to withdraw with a refund and with no grade (no "W") placed on permanent record.), or **November 18, 2022** (last day to withdraw with a "W" on your transcript). If you stop coming to class, and fail to withdraw by the 11/18 deadline, then a final grade must be assigned to you. The last day to change from a letter grade to pass/no pass is the **December 17, 2022**. **IMPORTANT NOTE:** If you drop or get dropped from your OCEA101 lecture section, then you will be automatically dropped from this ocean lab course too.

ACCOMMODATION OF DISABILITY: Students with a verified disability may be entitled to appropriate academic accommodations, including the assistance of a note-taker in the classroom, and/or extended time for taking exams. Students with disabilities who need academic accommodations should notify their professor. Please contact the Disabled Students Program and Services (DSPS) Office for more information

INSTRUCTOR'S ATTENDANCE POLICY: Attendance is critical to successfully completing this course. Attendance is taken every class meeting by means of a sign-up sheet that will be passed around at the beginning of each class. You are required to attend the entire scheduled lab meeting, unless I excuse you early. It is your responsibility to 1) show up on time, 2) sign in, and 3) attend the entire scheduled lab meeting, in order to receive credit for that class meeting. It will be up to you for staying up with lab assignments and exams. Make sure and consult the schedule, lab manual, class notes, classroom website, and fellow classmates about the material that was missed during absences. There is no make-up or rescheduling of either labs or lab exams. I realize that situations can arise that are beyond your control, which could interfere with attending this class. You are allowed to miss or drop one lab exercise during the semester without penalty.

TARDINESS and TURNING IN COMPLETED LAB WORK: Being late to a class once or twice is understandable; however, it should not become a habit. Constant tardiness will not be tolerated. Students will be given a warning and if he or she continues to be tardy, then each additional tardy (past the initial first two) will be counted as half an absence. If you do arrive to class late, then please use the interior entry door to enter the classroom. Pre-lab assignment work must be completely ready for instructor sign-off at the very beginning of the scheduled lab time. Late pre-lab work will not be accepted for grade points. Completed in-lab worksheets must be turned in at the end of the lab on that same lab day, prior to leaving the classroom, except if told otherwise by the instructor. Late lab work will not be accepted – no exceptions.

CLASSROOM AND FIELDTRIP BEHAVIOR AND STUDENT CODE OF CONDUCT: Students are expected to respect and obey standards of student conduct while in class and on campus. Charges of misconduct and disciplinary sanctions may be imposed upon students who violate these standards of conduct or provisions of college regulations. As your instructor, I have the following expectations of your behavior in this class:

1) Follow all lab safety practices listed on page 4 of this syllabus
2) Promote a positive learning environment by exhibiting mutual respect and consideration of the feelings, ideas, and contributions of others.
3) Demonstrate a genuine desire to learn, interact, and improve academically.
4) Demonstrate respect for furniture, tools, equipment, and supplies in the classroom.
5) Clean up after yourself.
6) No eating or drinking in the laboratory classroom.
7) All cell phones, pagers, and audio players must remain turned off, or in silent mode.

This class will be conducted in accordance with the college code of student conduct and basic standards of academic honesty. Cheating, plagiarism, or other forms of academic dishonesty are totally unacceptable and will not be tolerated. Violations of standards of academic honesty will be reported to the school dean for appropriate action. See the full version of the instructor's plagiarism policy at the **www.seascisurf.com/** site under the **MiraCosta OCEA 101L Tu Lab** link.

GRADING/EVALUATION:

I. **LABS:** Fifteen (15) laboratories @ 30 points each
II. **EXAMS:** Mid-term exam @ 150 points; Final exam @ 150 points
III. Late pre-lab assignments are not accepted.
IV. Late lab assignments are not accepted.
V. There are no make-ups for missed lab assignments.
VI. There are no make-ups for missed lab exams.
VII. One lab assignment score is dropped (either a missed lab or your lowest scored lab).
VIII. Total possible points (after dropped lab) = 720
IX. Extra credit is offered (up to 30 points). Extra credit opportunities listed on Canvas.
X. **Grading Scale:** Final course grade is based purely on points earned percentage:

100% – 90% = A
89% -- 80% = B
79% -- 70% = C
69% -- 55% = D
< 55% = F

EXTRA CREDIT: There are several extra credit assignments available: they include fieldtrips, and a couple other research activities. Extra credit assignments are listed in the Extra Credit Assignment Folder on Canvas. Up to 30 points of extra credit is allowed in this course. Last day to turn in extra credit work is Sunday, December 11, 2022, by the end of the day. Absolutely no EC work will be accepted after this date.

REQUIRED LAB MATERIALS: The following are the optimal technological conditions for success in this lab course: 1) a reliable, fast-running computer, with a good-sized monitor screen; 2) a reliable, fast-speed Internet connection; 3) a ringed notebook or folder; and 4) access to a printer.

MANDATORY FIELD TRIP PROCEDURES: For the mandatory field trips, we will meet in the field at a designated time instead of meeting in class. Transportation to and from the lab field site is the responsibility of the student. Furthermore, it is the student's responsibility to know the directions and location of the field sites PRIOR to the day of the fieldtrip. Consult the syllabus and lab worksheet for locations and meeting times. To be eligible to attend the mandatory field labs or voluntary weekend fieldtrips, the student must have signed the student fieldtrip liability waiver form prior to attending the fieldtrips. Any student who did not sign the waiver form will not get credit for any fieldtrip that they attended. School policy prohibits firearms, illegal drugs, alcohol, or intoxication on any field trip or in class.

Field Trip Cancellation Policy: If the weather looks REALLY threatening (like pouring rain) on a day that a lab fieldtrip is scheduled, I will make a determination at least 2 hours before the lab time to cancel the trip. I will, at that time, email everyone to notify students of the cancellation, and post a cancellation message on the classroom web page.

VOLUNTARY WEEKEND FIELD TRIPS: Two weekend field trips are planned for the semester. Field trips earn extra credit and are totally voluntary!

1) Weekend field trip: Saturday September 17 – Torrey Pines Beach, 9:00am to 1:00pm
2) Weekend field trip: Saturday November 5 – Blacks Beach, 9:00am to 1:00pm

Notes: Check the professor's classroom web page for fieldtrip details

- Extra credit will be awarded for participating on these trips.
- Experience gained on fieldtrips greatly helps in understanding the text and lecture material.
- Field trips are fun and a great way to better know your classmates and instructor.
- Note that if you cannot attend an in-person fieldtrip, then you can do a virtual fieldtrip option
- Earn up to 20 points per in-person fieldtrip. Earn up to 10 points per each virtual fieldtrip.

WEEKLY LABORATORY ACTIVITY PROCEDURE: Each week's lab includes a pre-lab activity, a set of in-class activities, and a post-lab written reflection: Below are the four ocean lab duties that the student needs to do each week, in the following order:

1) Lab Worksheet - Download and print out a hard-copy of that week's lab worksheet. Lab worksheet files are found in the Canvas course Module folder and linked on the home page's lab schedule table. It is advised to print out a color copy of the worksheet if there are colored images/illustrations. Bring the worksheet hard copy to lab.

2) Pre-lab Preparation - In order to properly prepare for each week's set of in-lab activities, an online Canvas pre-lab activity has been set up for each lab. Prior to the lab meeting, the student needs to log onto the Canvas course site and access the Pre-lab Module section and study document and video links/pages that provide background information for that week's lab topic and activities. A set of pre-lab activity questions are found in the lab worksheet. The student must answer the worksheet pre-lab questions PRIOR to the beginning of the lab. Copying another student's pre-lab work is considered cheating. The instructor will circulate around the room at the beginning of lab to check every student's worksheet for pre-lab completion. Pre-lab sections not completed prior to lab will graded with zero points.

3) In-lab Activities - Make sure to have a hard-copy of the lab worksheet when you get to lab. At the beginning of each lab, the instructor will give a brief lab lecture on concepts of the lab topic and needed directions on how to complete the lab activities and exercises. The remaining of the lab will be dedicated to completing the various hands-on lab activates. Students will fill out the worksheet as they progress through the set of lab exercises.

4) Post-lab Reflection – When all lab exercises have been completed, the student needs to write a brief post-lab reflection (found at end of worksheet) before turning in the worksheet at the end of the lab meeting. The due date for each week's lab worksheet is at the end of the same lab meeting. Lab worksheets taken home after lab to be later completed and then brought back the next lab meeting will not receive points unless authorized by the instructor.

Safety Practices for Ocean Science Laboratory

The science laboratory is a fun place to work and study. But there are safety and courtesy guidelines that you must follow to make everyone's laboratory experience both enjoyable and safe.

1. Follow all written and verbal instructions carefully. When the professor is explaining laboratory concepts and procedures, pay attention and desist from distracting behaviors. You must give laboratory procedures your full interest, attention, and effort.

2. Whether or in the lab room or on field trips, students must conduct themselves in an appropriate and responsible manner. Running, shouting, and horsing around are not acceptable.

3. Prepare for the laboratory activity each week by checking your syllabus for the activity, time, and location, and (if applicable), completing the **pre-lab exercise** that is due.

4. Place books, backpacks, and other bulky items in out-of-the-way areas of the lab room. Do not block floors, aisles, and walkways with these objects.

5. Appropriate clothing must be worn for laboratory activities. Long necklaces, bulky jewelry, or excessively baggy clothing are discouraged in the lab room. Long hair must be tied back anytime glassware or chemicals are present. Close-toed shoes are required for all labs.

6. No food or drink in the lab allowed in lab at any time. Water is OK.

7. Keep track of which lab days involve field trips, check the weather that day, and come dressed with appropriate clothing and footwear. In the event of a possible weather cancellation for a field trip, check professor's course web page and/or your email by 12:30 pm on the day of the trip. The professor will contact you only in the event of cancellation/rescheduling; otherwise, you should assume that the trip is on.

8. You are responsible for arriving at field trips on time and prepared. Coming to a field trip is no different than coming to the lab classroom - it's just lab in a different location. Lab activities on field trip days begin and end at the field trip location.
9. Be respectful of, and careful with, laboratory equipment and materials. Many students use these materials. The equipment and materials that you will use this semester are in good condition only because previous students used them with care.
10. When working with chemical solutions, treat all solutions as potentially hazardous, and follow all instructions.
11. Report any accident, injury, or unsafe medical condition to the professor immediately. Report any broken or damaged equipment, or other potential hazards, as well.
12. If your skin and/or clothes are burned by a chemical spill, rinse the area immediately with plenty of running water. If your eyes are affected, immediately go to the eyewash station and rinse your eyes thoroughly.
13. Know the locations of laboratory sinks, exits, eyewash station, first aid kit, and fire extinguisher.

Tuesday Ocean Laboratory Schedule - MiraCosta Fall 2022

Date	Lab Meeting Lecture and Discussion Topic	Location and Time
Tu 8/23	LAB 1 - Introduction / Safety / Scientific Measurement	OC4529 @ 1:30 pm
Tu 8/30	LAB 2 - Isostasy	OC4529 @ 1:30 pm
Tu 9/6	LAB 3 - Maps and Charts	OC4529 @ 1:30 pm
Tu 9/13	LAB 4 - Seafloor Geography / Plate Tectonics	OC4529 @ 1:30 pm
Sat 9/17	**Voluntary Weekend Fieldtrip** - Torrey Pines Beach - Coastal Geology and Tectonics Theme	See Online Fieldtrip Guide for Info Meet at beach at 9:00 am
Tu 9/20	LAB 5 – Navigation	OC4529 @ 1:30 pm
Tu 9/27	LAB 6 - Sediments	OC4529 @ 1:30 pm
Tu 10/4	LAB 7 - Seawater Chemistry Ocean Chemistry (closed-toed shoes required)	OC4529 @ 1:30 pm
Tu 10/11	**MIDTERM LAB EXAM**	OC4529 @ 1:30 pm
Tu 10/18	LAB 8 - Ocean Waves - Field Trip	Oceanside Pier @ 1:45 pm
Tu 10/25	LAB 9 – Beach Profiling - Field Trip	Tamarack Beach @ 1:45 pm
Tu 11/1	LAB 10 - Wave Behavior	OC4529 @ 1:30 pm
Sun 11/5	**Voluntary Weekend Fieldtrip** - Blacks Beach Waves and Currents Theme	See Online Fieldtrip Guide for Info Meet at beach at 9:00 am
Tu 11/8	LAB 11 – Beach and Bluff Erosion - Field Trip	Stonesteps Beach @ 1:45 pm
Tu 11/15	LAB 12 - Tides	OC4529@ 1:30 pm

Tu 11/22	LAB 13 - Beach Sediments and Tidepools – Field Trip	Swamis Beach Park @ 1:45 pm
Tu 11/29	LAB 14 – Lagoon Geology and Ecosystem – Field Trip	Batiquitos Lagoon @ 1:45 pm
Tu 12/6	LAB 15 - Marine Life & Habitats - Field Trip	Birch Aquarium @ 2:00 pm
Tu 12/13	**FINAL LAB EXAM**	OC4529 @ 2:00 pm

Please Note: This schedule may be changed or modified by the instructor at any time during the semester. Students will be notified in a timely basis if changes are made.