SIO 111/Physics 111 Introduction to Ocean Waves Course Syllabus, Winter, 2024

Course website: SIO/PHYS 111 on Canvas

Lectures:	Tu Th 3:30-4:50 pm	NH101	In Person / Podcast
Discussion:	Wed 5-5:50pm		Zoom
Final exam:	Tu March 19th 8:00)-11:00am	format TBD

Instructor: Falk Feddersen, Professor, Scripps Institution of Oceanography, <u>ffeddersen@ucsd.edu</u>, Zoom Office hours: https://ucsd.zoom.us/j/7245717922, Mon 5-6pm; Fri 9-10am, or by appt

Teaching Assistant: Ray Young, SIO Graduate Student, Math, <u>ray011@ucsd.edu</u> Zoom Office hours: Tuesdays 6:00-7:00 pm <u>https://ucsd.zoom.us/j/99972087099</u> Password: SIO111

Administrator: Josh Reeves, ECKART 204, 858-822-4559, jdreeves@ucsd.edu

Course description:

An introduction to ocean surface waves and linear dispersive wave theory including: Dispersion relation, group velocity, wave energy flux, and ray tracing; sources of wave energy, wave measurement and prediction, shoaling waves, wave current interaction, ship wakes, and wave fluid dynamics.

<u>Textbook</u>: On-line textbook written by SIO Professor Rick Salmon. The textbook may be downloaded from the Canvas or at http://pordlabs.ucsd.edu/rsalmon/111.textbook.pdf Other resources include: Chapter 7 of Kundu: (available online at UCSD library) http://www.sciencedirect.com/science/book/9780123821003

Prerequisites: Physics 2A-C or 4A-C, and Math 20A-E or equivalent. (To gauge the mathematical level of the class, see the on-line textbook at the website.)

Assignments and Grading:

The final grade is based on HW 44%, Mid-term 28%, and Final exam 28% The final grade is on a curve. HW is due to Canvas at the date and time for which it is assigned. HW will be assigned on Tuesdays and will be due the following Tuesday by 11:59 pm. Late HW will not be accepted, except for illness or unusual circumstances. Prof. Feddersen must be informed via email of and approve late assignments before the 6pm on the day of the HW deadline. One HW will be dropped from the HW grade. Extra credit will be given for those who do all the assigned HW. There is also an extra credit HW. HW will be reviewed in the discussion section following the HW due date and HW will be graded before the following Tuesday. It is highly recommended to not wait until the

HW due day to start working on the HW.

PLANNED SCHEDULE:

Tues/Thur are lecture days. HW will be assigned Tuesdays and is due via Canvas before midnight the following Tuesday, unless otherwise stated. HW will be discussed in the section following HW due date. This schedule is tentative and may be subject to change, which will be announced via canvas and revisions to this syllabus.

JAN	9	Tu	Introduction with ungraded Int	ro Quiz
JAN	10	W	No Discussion Section	
JAN	11	Th	Chapter 1	
JAN	16	Tu	Chapter 1	HW1 assigned
JAN	17	W	Open or visit SIO pier	
JAN	18	Th	Chapter 2	
JAN	23	Tu	Chapter 2	HW1 due; HW2 assigned
JAN	24	W	Discuss HW1	
JAN	25	Th	Chapter 3	
JAN	30	Tu	Chapter 3	HW2 due; HW3 assigned
JAN	31	W	Discuss HW 2	
FEB	1	Th	Chapter 4	
FEB	6	Tu	Chapter 4	HW3 due; HW4 assigned
FEB	7	W	Discuss HW 3	
FEB	8	Th	Chapter 4	
FEB FEB FEB	13 14 15	Tu W Th	Chapter 5 Discuss HW 4 Mid-term exam	HW4 due Remote or in person format TB
FEB	20	Tu	mid term review	
FEB	21	W	Discussion: TBD	
FEB	22	Th	Chapter 6	
FEB	27	Tu	Chapter 6	HW5 (covering Ch 6) assigned
FEB	28	W	Discussion: TBD	
FEB	29	Th	Chapter 7	
MAR	5	Tu	Chapter 7	HW5 due; HW6 (on Ch 7) assigned
MAR	6	W	Discuss HW 5	
MAR	7	Th	Chapter 8	
MAR	12	Tu	Chapter 8	HW6 due; extra credit HW7 assigned
MAR	13	W	Discuss HW6	
MAR	14	Th	Review or Guest Lecture	
MAR	15	Fr	extra discussion section	extra credit HW 7 due
MAR	19	Tu	Final Exam 8:00-11:00am	format TBD

Lectures: Lectures will be in person in Nierenberg Hall 101 (NH101) and also available shortly thereafter on Canvas via podcast.ucsd.edu. You are notified that these lectures will be recorded, and that this program uses video and audio recording or other personal information for the purpose of facilitating the course and/or test environment. UC San Diego does not allow vendors to use this information for other purposes. Recordings will be deleted when no longer necessary. However, if cheating is suspected, the recording may become part of the student's administrative disciplinary record.

Discussion Section: The Wed 5pm discussion section will be on zoom. Zoom links are on the canvas site and also here: https://ucsd.zoom.us/j/92948221269

Office Hours: Prof. Feddersen will have Zoom office hours Mondays at 3-4pm and Fridays 9-10am starting January 13th at <u>https://ucsd.zoom.us/j/7245717922</u>. Prof. Feddersen can also be available by appointment. TA Young will have Zoom office hours on Tuesdays 6-7pm starting January 17th at link <u>https://ucsd.zoom.us/j/99972087099</u>_Password: SIO111

Mid-term and Final Exam: In the past three years, the mid-term and final exam have been fully remote based on strong student preference. We will discuss whether the mid-term and final will be in person or remote in class.

Scientific Programming: Prior knowledge of scientific programming using MATLAB or python is not required for this course. However, it is useful for understanding concepts and a number of MATLAB scripts for concepts in the course are available on canvas, as well as information for installing MATLAB on your system.

Resources : CDIP wave buoy network website: <u>cdip.ucsd.edu</u>, Free Surf Prediction Website; <u>http://www.stormsurf.com/mdls/menu_wam.html</u> Further resources are on CANVAS

Disability Resources: Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD) located in University Center 202 behind Center Hall. Students should present their AFA letters to Faculty (please make arrangements to contact me privately) at least two weeks prior to an exam to ensure that accommodations may be arranged.

Contact the OSD for further information:

T: 858.534.4382 E: osd@ucsd.edu W: http://disabilities.ucsd.edu

Course Policies

• Attendance Policy: Class attendance is not required and class participation is not a component of one's grade. However, there is often a correlation between class

participation and learning of the material.

- **Technology Policy:** Use of tablets and laptops for note taking during class is the only allowed usage of devices. If you need to send SMS, instant messages, or talk on any device, please quietly leave the classroom.
- Letter of Recommendation Policy: I am happy to write letters of recommendation for students of the course. I ask for at least 2 weeks of lead time. For me to write an effective letter, it helps if the letter requester is actively engaging in class, discussion, office hours etc.
- Late Assignment Policy: Any assignment turned in after the due date will receive a zero. If you have a situation where you need extra time, email Prof. Feddersen requesting an extension giving a specific reason and a new assignment deadline.

Campus Policies

Relevant UC San Diego policies and statements

- <u>UC San Diego Principles of Community</u>
- <u>UC San Diego Policy on Integrity of Scholarship</u>
- <u>Religious Accommodation</u>
- Nondiscrimination and Harassment
- <u>UC San Diego Student Conduct Code</u>