FLORIDA ATLANTIC UNIVERSITY

COURSE CHANGE REQUEST
Undergraduate Programs

Department Ocean & Mechanical Engineering

College COECS

UUPC Approval 2/24/25
UFS Approval _____
SCNS Submittal _____
Confirmed _____
Banner Posted _____
Catalog _____

***Current* Course Prefix and Number**	EOC 4422	***Current* Course Title**	Ocean Wave Mechanics

*Syllabus must be attached for **ANY** changes to current course details. See Checklist. Please consult and list departments that may be affected by the changes; attach documentation.*

Change title to:

Change prefix

From: **To:**

Change course number

From: **To:**

Change credits*

From: **To:**

Change grading

From: **To:**

Change WAC/Gordon Rule status**

Add ☐ **Remove** ☐

Change General Education Requirements***

Add ☐ **Remove** ☐

*Review Provost Memorandum

**WAC/Gordon Rule criteria must be indicated in syllabus and approval attached to this form. See WAC Guidelines.

***General Education criteria must be indicated in syllabus and approval attached to this form. See GE Guidelines.

Change description to:

Change prerequisites/minimum grades to:

EOC 3123 with a minimum grade of C

Change corequisites to:

Change registration controls to:

Please list existing and new pre/corequisites, specify AND or OR and include minimum passing grade (default is D-).

Effective Term/Year for Changes:	Fall 2025	**Terminate course? Effective Term/Year for Termination:**	

Faculty Contact/Email/Phone Dr. Sid Verma / vermas@fau.edu

Approved by		***Date***
Department Chair	Pierre Philippe Beaujean	1/22/2025
College Curriculum Chair	Galan Liu	2/12/25
College Dean		
UUPC Chair	Korey Sorge	2/24/25
Undergraduate Studies Dean	Dan Messroff	2/24/25
UFS President		
Provost		

Email this form and syllabus to mjenning@fau.edu seven business days before the UUPC meeting.

Department of Ocean and Mechanical Engineering
Florida Atlantic University
Course Syllabus

1. Course title/number, number of credit hours	
EOC4422 Ocean Wave Mechanics	3 credit hours
2. Course prerequisites, co-requisites, and where the course fits in the program of study	
Prerequisite: • EOC 3123 Fluid Mechanics (with a grade of C or above)	
3. Course logistics	
Term: Fall 2025 Class hours: MW 11:30 – 12:50pm, ST 209	
4. Instructor contact information	
Instructor's name *Office address* *Office Hours* *Contact telephone number* *Email address*	Prof. Sid Verma SeaTech ST 236 MTWR 4:00 to 5:00 pm 954-924-7227 vermas@fau.edu
5. TA contact information	
TA's name *Office address* *Office Hours* *Contact telephone number* *Email address*	N/A
6. Course description	
Small amplitude wave theory, finite amplitude waves, wave generation, wave forecasting, wave measurements. Wave force on fixed structures, floating bodies and moored bodies.	
7. Course objectives/student learning outcomes/program outcomes	
Course objectives	The objective of the course is to provide the students with a basic and applied knowledge of water wave mechanics as required in the design of ocean structures, marine vehicles and harbors; in the protection of shores; and for the prediction of sea states.
Student learning outcomes & relationship to ABET 1-7 objectives	1. An ability to apply the knowledge of mathematics for formulation and analysis of ocean wave and boundary-value fluids problems. (1) 2. A thorough knowledge of the basic properties of ocean waves in deep and coastal waters, and mechanisms of wave generation. (1) 3. An ability to determine wave forces on fixed and floating structures. (1) 4. A basic knowledge of the relation between atmosphere and sea states, and wave modeling and spectra. (1) 5. An ability to make measurements of surface waves and/or analyze experimental data. (6) 6. An ability to work on team projects. (5)

8. Course evaluation method

Home Work	30%
Midterm I	20%
Midterm II	20%
Final Exam	30%

9. Course grading scale

Grading Scale:
90 and above: "A", 87-89: "A-", 83-86: "B+", 80-82: "B", 77-79 : "B-", 73-76: "C+", 70-72: "C", 67-69: "C-", 63-66: "D+", 60-62: "D", 51-59: "D-", 50 and below: "F."

10. Policy on makeup tests, late work, and incompletes

Makeup tests are given only if there is solid evidence of a medical or otherwise serious emergency that prevented the student of participating in the exam. Makeup exam should be administered and proctored by department personnel unless there are other pre-approved arrangements

Incomplete grades are against the policy of the department. Unless there is solid evidence of medical or otherwise serious emergency situation incomplete grades will not be given.

University policy on electronic devices during exams: No cell-phones, i-pads, or other electronic devices are allowed during any of the exams. No watches capable of taking pictures or communicating with others are allowed during exams. If, because of an emergency, there is a need to carry an electronic device to the exam, you must secure permission from the instructor

11. Special course requirements

This course contains no special requirements.

12. Classroom etiquette policy

University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones and laptops, are to be **turned off** during class.

13. Disability policy statement

In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS)—in Boca Raton, SU 133 (561-297-3880); in Davie, LA 203 (954-236-1222); or in Jupiter, SR 110 (561-799-8585) —and follow all SAS procedures.

14. Honor code policy

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and place high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. See University Regulation 4.001 at www.fau.edu/regulations/chapter4/4.001_Code_of_Academic_Integrity.pdf

15. University Attendance Policy

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance. Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

16. Counseling and Psychological Services Center

Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to http://www.fau,edu/counseling/

17. Required texts/reading

Water Wave Mechanics for Engineers and Scientists, by Robert G. Dean and Robert A. Dalrymple, World Scientific Publishing Company, 1991.

18. Supplementary/recommended readings

Coastal Engineering Manual – Part II, US Army Corps of Engineers (PDF version on Canvas)

19. Course topical outline, including dates for exams/quizzes, papers, completion of reading

Tentative Course Topics:

1. Potential flow, Laplace's equation, boundary value problems.
2. Small amplitude waves, linearized boundary conditions.
3. Periodic, progressive and standing wave solutions.
4. Wave kinematics, dispersion relation, shallow- and deep-water waves.
5. Phase and group velocity, energy propagation, capillary waves.
6. Wave and current interaction, shoaling waves and refraction.
7. Long wave theory, tides in channels, storm surge.
8. Wave radiation, wave-maker theory.
9. Wave forces, Froude-Krylov and Morison-equation methods.
10. Wind generated waves, Sea spectra (time permitting)

Tentative Dates:

Midterm I: Wednesday, Sept 26th

Midterm II: Monday, Oct 29th

Final Exam: Monday, December 10, 10:30 am to 1:00 pm