1. Course title/number, number of credit hours			
EOC 4422 – Ocean Wave Mechanics		3 credit hours	
2. Course prerequisites, corequisites, and where the course fits in the program of study			
Prerequisite: EOC 3123 - Ocean Engineering Fluid Mechanics (with a grade of C or above) Co-requisite: EGN 4323 - Vibrations Synthesis and Analysis.			
3. Course logistics			
<i>Term</i> : Fall 2019 This is a classroom lecture course. <i>Class location and time</i> : Seatech - Room 209 Wednesday/Friday 11:30am-12:50pm			
4. Instructor contact information			
Instructor's name Office address Office Hours Contact telephone number Email address 5. TA contact information	Siddhartha Verma Seatech 235 Fridays 1:30PM – 2:3 954.924.7202 vermas@fau.edu	0 PM (or by Appointment)	
TA's name Office address Office Hours Contact telephone number Email address	N/A		
6. Course description			
The course deals with 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 c and applied knowledge	ourse is to provide the students with a basic ge 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	 An ability to apply the knowledge of mathematics for formulation and analysis of ocean wave and boundary- value fluids problems. (a,e/1) A thorough knowledge of the basic properties of ocean waves in deep and coastal waters, and mechanisms of wave generation. (a/1) An ability to determine wave forces on fixed and floating structures. (a,e,k/1,6) A basic knowledge of the relation between atmosphere and sea states, and wave modeling and spectra. (a/1) An ability to make measurements of surface waves and/or analyze experimental data. (b/6) An ability to work on team projects. (d/5) 			
8. Course evaluation method				
Homework 15% Quizzes 20% Midterm 20% Group Project 15% Final Exam 30%	Weekly homework to be submitted online on Canvas, graded on a scale of 0 to 2. Short in-class quizzes will be administered approximately every two to three weeks (announced in advance). There will be a mid-term exam halfway through the course. A group project involving data collection/analysis and a written report will be due before the final exam. Part of the project grade will be based on peer-evaluation.			
9. Course grading scale				
A > 95% A- 90 - 9 B+ 85 - 8 B 80 - 8 B- 75 - 7 In case the final class avera	C+ $70 - 74.9$ C $65 - 69.9$ C- $60 - 64.9$ D $50 - 59.9$.9 F < 50 re is lower than a 'B-', all grades will be adjusted upward.			
10. Policy on makeup tests, late work, and incompletes				
Late work will not be accepted unless there is solid evidence of a medical or otherwise serious emergency that prevented the student from completing the assignments on time. 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. 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 disabled in class sessions.

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. 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/

16. Required texts/reading

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

17. Supplementary/recommended readings

None

18. Course topical outline, including dates for exams, papers, completion of reading

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)

Exam dates:

Mid-term Exam:	September 27 th , 2019 (11:30am - 12:50pm) - in class
Final Exam:	December 11 th , 2019 (10:30am - 1:00pm) – in class