Instructor: Dr. James M. Kaihatu
Office: CVLB Room 808D
Phone: Office: 979-862-3511
Email: jkaihatu@civil.tamu.edu
Web: https://ceprofs.civil.tamu.edu/jkaihatu/teaching/ocen672/index.html

Office Hours (2015A): 1400-1600 TF
Class Time/Location: MWF, 12:40-1:30, CVLB109
Prerequisite: OCEN671 or permission of instructor

Objective: The objective of this course is to learn how to apply the principles of graduate-level ocean wave mechanics and fluid mechanics to the solution of coastal engineering problems.

Course Catalog Description: Effects of waves on coastal structures; design of seawalls breakwaters, jetties, harbors, ship channels and pipelines; intentional and accidental discharge of pollutants; diffusion and spreading; oil spill containment and collection.

Text: There is no standard text for the course. Most material will be taken from the U.S. Army Corps of Engineers’ Coastal Engineering Manual (http://chl.erdc.usace.army.mil/cem), and will be referred to by part, chapter and section. Some material will also be taken from other sources; this material will either be provided in class or posted to the class web page. These additional sources may include (and are not limited to):

Grading:  
   Homework: 20%
   Midterm: 25%
   Final Project: 25%
   Final Exam: 30%

Homework: Assigned homework must be handed in by the due date at the beginning of class. Late homework will be penalized 10% each day it is late unless you have an excuse recognized by the University (http://student-rules.tamu.edu/rule7.htm) and then, only with advance notice (with the exception of emergencies). Collaboration between students is acceptable but blind copying is prohibited. Some assignments may require computer solution.

Exam: A midterm exam and final exam will also be distributed. Grades will be based on both the approach and the final answer. Some problems may be open ended and require judgment to solve.

Project: In addition, students will be required to develop a term project dealing with some aspect of coastal engineering. The project will make use of online web hosting (details in progress) to prepare a semi-permanent record of the work. More information regarding the project will follow.
Course Outline: This is a tentative outline and subject to change. There will be some periods of sustained travel this semester, which may change meeting times and locations.

20Jan-22Jan: Introduction; brief review
25Jan-29Jan: Extreme value statistics, design wave specification
1Feb-5Feb: Radiation stress, nearshore hydrodynamics.
8Feb-12Feb: Astronomical tides, water level datums
15Feb-19Feb: Inlet hydrodynamics, coastal meteorology
22Feb-26Feb: Storm surge, wind wave generation
29Feb-4Mar: Long waves, tsunamis, harbor oscillation
7Mar-11Mar: Littoral processes (Evening exam: 9 Mar 7:00pm – 8:40 pm)
21Mar-25Mar: Soft coastal engineering solutions (25 Mar: Reading day – no classes)
28Mar-1Apr: Soft coastal engineering solutions
4Apr-8Apr: Coastal structures
11Apr-15Apr: Coastal structures, pipelines, pollutants and cleanup
18Apr-22Apr: Port and harbor design, risk
25Apr-29Apr: Elements of coastal design
2May-6May: Elements of coastal design (3 May: last day of class. 6 May: Final Exam 10:30am-12:30pm)

Academic Integrity Statement: “An Aggie does not lie, cheat or steal, or tolerate those who do.” Students are expected to understand and abide by the Aggie Honor Code presented on the web at: http://www.tamu.edu/aggiehonor. No form of scholastic misconduct will be tolerated. Academic misconduct includes cheating, fabrication, falsification, multiple submissions, plagiarism, complicity, etc. They are more fully defined in the above web site. Violations will be handled in accordance with the Aggie Honor System Process described on the web site.

ADA: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information visit http://disability.tamu.edu.