

University Of California, Berkeley
Department of Mechanical Engineering

E201 – Graduate Ocean Engineering Seminar (2 Units)

Graduate Course

Syllabus

CATALOG DESCRIPTION:

Lectures on new developments in ocean, offshore, and arctic engineering.

COURSE PREREQUISITES:

None.

TEXTBOOK(S) AND/OR OTHER REQUIRED MATERIAL:

None.

COURSE OBJECTIVES:

To provide exposure of the field of ocean engineering, arctic engineering and related subject areas to students at graduate level with intention to show the broad and interdisciplinary nature of this field, particularly recent or new developments.

DESIRED COURSE OUTCOMES:

Students will learn of new developments in ocean, offshore, and arctic engineering, connecting much of what is learned in other courses to practical applications and active research topics.

TOPICS COVERED:

Speakers are to be arranged by the engineering faculty, coordinated by an instructor in charge with volunteered faculty hosts for seminars. Topics can fall into the context of: ocean processes, ocean systems, machines operating in the ocean, aspects of engineering, scientific, marketing, or economic issues of the above. Ocean can be taken as the physical environment of deep oceans, estuary, near-shore, arctic and possibly the meteorological ocean. Invited speakers will be hosted by a faculty member of the College to foster faculty and student interests in new development in research and engineering issues.

CLASS/LABORATORY SCHEDULE:

15 weeks - 2 hours of lecture per week & time to prepare report

CONTRIBUTION OF THE COURSE TO MEETING THE PROFESSIONAL COMPONENT

Enables students to see talks by leading experts from academia and industry. To inspire these students interested in ocean engineering and fluid dynamics. The seminars themselves with top quality invited speakers from across the country will hopefully help ignite a more intense passion for learning. Having these students attend this E201 seminar-series can only benefit them, and assist us as we try to encourage them in their studies

ASSESSMENT OF STUDENT PROGRESS TOWARD COURSE OBJECTIVES

Attendance: 50% (must attend 75% of the seminars to pass)

Report: 50% (submission of proper report required to pass)

I.e. to pass, must both submit a proper report and attend 75% of seminars.

SAMPLE OF WEEKLY AGENDA:

Spring semester, every Friday 2-4pm, different OE talk. Example of spring 2018 schedule:

Date Speaker (Affiliation) “Title”

Jan. 20: *Visit-Day & Open Lab Tour: (Host: Ocean Group)*

Jan. 26: *Prof. Ronald W. Yeung, UC Berkeley, "Ocean Renewable Energy - Modeling & Efficiency" (Host: Prof. S. Mäkiharju)*

Feb. 2: *Dr. Jelena Vidic-Perunovic (Doris Inc., Houston) "Engineering Advanced Marine Systems: Challenges Imposed by Emergent Structural Behavior" (host: Prof. R. Alam)*

Feb. 9: *Antoine Peiffer (Principle Power Inc.), "WindFloat, enabling a paradigm shift for the renewable energy market in California" (host: Prof. R. W. Yeung)*

Feb. 16: *Prof. Olivier Coutier-Delgosha (ENSAM & Virginia Tech.), "Cavitation & bubbles: investigation of the physical mechanisms by joint experimental and numerical approaches." (host: Prof. S. Mäkiharju)*

Feb. 23: *Prof. Evan Variano (UC Berkeley) "Biased motion of ellipsoidal particles in turbulent suspensions, including active particles." (host: Prof. S. Mäkiharju)*

Mar. 2: *Prof. David R. Dowling (U. of Michigan) "Out-of-Band Underwater Acoustics" (host: Prof. S. Mäkiharju)*

Mar. 9: *Prof. Kevin Maki (U. of Michigan), "Prediction of Ship Structural Response when Operating in Extreme Seas" (host: Prof. S. Mäkiharju)*

Mar. 16: *Prof. Carolyn Judge (U.S. Naval Academy), "Model Testing of High-Speed Planing Craft" (host: Prof. S. Mäkiharju)*

Mar. 23: *Chris Willert, (DLR) "High-Speed Particle Image Velocimetry for the Efficient Measurement of Turbulence Statistics: apg boundary layer piv" (host: Prof. S. Mäkiharju)*

Mar. 30: *Spring Recess week*

April 6: *TBA*

April 13: *TBA*

April 20: *Prof. Ali Mani (Stanford University) "TBD" (host: Prof. S. Mäkiharju)*

April 27: *Dr. Nimish Pujara (UC Berkeley) "TBD" (host: Prof. S. Mäkiharju)*

May 4: *RRR Week (no seminar)*

ROOMSHARE INFORMATION:

This course will be room shared with ME 160

PERSON(S) WHO PREPARED THIS DESCRIPTION

Asst. prof. Simo A. Mäkiharju & Assc.Prof. Reza M. Alam, 2/27/2018

ABBREVIATED TRANSCRIPT TITLE (19 SPACES MAXIMUM): GRD OCN SEMINAR

TIE CODE: SEMT

GRADING: P/NP

SEMESTER OFFERED: Spring

COURSES THAT WILL RESTRICT CREDIT:

INSTRUCTORS: S.A. Mäkiharju, and R. Alam (host the seminar series)

DURATION OF COURSE: 14 Weeks

EST. TOTAL NUMBER OF REQUIRED HRS OF STUDENT WORK PER WEEK: Varies

IS COURSE REPEATABLE FOR CREDIT? Yes

CROSSLIST: None