

# MASE - MARITIME SYSTEMS ENGR (MASE)

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## MASE 400 Introduction to Coastal Engineering

**Credits 3. 3 Lecture Hours.** Mechanics of shallow water wave motion; wave diffraction, refraction and reflection; wave forecasting; water level fluctuations; coastal processes and geomorphology; erosion control and shoreline stabilization; coastal structures; beach nourishment; dredging; introduction to physical and computer models and modeling techniques; design in coastal engineering. **Prerequisites:** OCEN 300; senior classification or approval of instructor. Enrollment in OCSE major degree sequence.

## MASE 401 Underwater Acoustics

**Credits 3. 3 Lecture Hours.** Fundamentals of underwater acoustics, SONAR equations, propagation of underwater sound, acoustic transducers and arrays, noise in the ocean environment, design and prediction of SONAR systems, ocean engineering applications of underwater sound. **Prerequisites:** CVEN 311/EVEN 311, CVEN 336. Junior or senior classification or approval of instructor. Enrollment in OCSE major degree sequence.

## MASE 407 Capstone Design II

**Credits 3. 6 Lab Hours.** Design of a major engineered system based on a proposal developed in MASE 406 completed as a group project; realistic application of engineering skills and tools, experience managing a significant engineering-design effort. This is a writing-intensive course including a major report and weekly one-page written reports. **Prerequisites:** MASE 406. Enrollment in OCSE major degree sequence.

## MASE 410 Measurements in the Ocean Laboratory

**Credit 1. 3 Lab Hours.** Fundamental techniques and instrumentation for field and laboratory measurements pertaining to coastal and ocean engineering (e.g., currents, wave height, wave/sediment interaction, mass transport, surveying, etc.); experiment planning; data analysis and presentation; written reports on methodology, analysis, and results of experiments. **Prerequisites:** OCEN 300, MASE 400. Junior or senior classification or approval of instructor. Enrollment in OCSE major degree sequence.

## MASE 485 Directed Studies

**Credits 1 to 4. 1 to 4 Other Hours.** Directed study on selected current problems in the ocean and/or maritime industry. Offered to enable individuals or groups to undertake and complete with credit some specialized investigation not covered by other courses. **Prerequisites:** Approval of department head. Junior or senior classification or approval of instructor. Enrollment in OCSE major degree sequence.

## MASE 489 Special Topics

**Credits 1 to 4. 1 to 4 Lecture Hours.** Selected topics in a identified area of maritime systems engineering. May be repeated for credit. **Prerequisite:** Junior or senior classification or approval of instructor. Enrollment in OCSE major degree sequence.

## MASE 491 Research in Maritime Systems Engineering

**Credits 0 to 4. 0 to 4 Other Hours.** Research conducted under the direction of faculty member in Maritime Systems Engineering. May be repeated 2 times for credit. Please see academic advisor in department. Registration in multiple sections of this course is possible within a given semester provided that the per semester credit hour limit is not exceeded. **Prerequisites:** Junior or senior classification and approval of instructor. Enrollment in OCSE major degree sequence.