



Indian Institute of Technology

Course Details Report

Course No: OE5080

Course Name: Marine Instrumentation

Course Type:

Theory

Description:

This course focuses on the principles of different ocean instruments, and their applications. The type of instruments discussed in this class are usually deployed in the actual ocean. The course requires basic (school-level) knowledge of circuit elements such as inductors, capacitors, and resistors. The student is also expected to know basic circuit theorems such as the Ohm's, and Kirchoff's law. The course will be supplemented with lectures from people with practical experience in the field.

Course Content:

Dynamic response of measuring instruments (with examples), acoustic instruments and transducers, CTD construction and operation, expendable ocean instruments, current profilers, strain gauges, acoustic positioning systems, sampling, spectral analysis, basic filtering, measuring system response using spectral analysis (magnitude and phase response), optical instruments.

Text Books:

1. "Mechanical Measurements," by Thomas G. Beckwith, Roy D. Marangoni, and John H. Lienhard V, 6th Edition, 2009
2. "Encyclopedia of Ocean Sciences" 2nd Edition Six Volumes set, 2009 ISBN9780122274305 published by Academic Press

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