SIO 111/Physics 111 References

Nothing is required and no reading assignments will be made, but you may enjoy looking at some of these.

POPULAR (Non-mathematical books for the non-scientist.)

Willard Bascom
Waves and Beaches
Anchor Press 1980
GC 211 B299 (SIO)
Very readable, but now somewhat out of date.

Horace Keeling (editor)
Tsunamis: the great wave
Nova Science Publishers 2005
GC 221.2 T77 2005 (SIO)
Overview of the 2004 tsunami.

The Open University
Waves, Tides, and Shallow-water Processes (2d ed.)
Butterworth-Heinemann 1999
GC 211.2 W38 1999 (SIO)
Good illustrations with lots about sediment transport.

ADVANCED UNDERGRADUATE (Books at or above the level of our lecture notes.)

Blair Kinsman
Wind Waves: Their Generation and Propagation on the Ocean Surface
Dover
This long-out-of-print 1965 classic presents a thorough derivation of the basics at a level comparable to our course notes, and a good introduction to the spectral analysis of wave measurements.

J. Billingham & A. C. King
Wave Motion
Cambridge University Press 2000
Emphasizes the mathematical techniques for studying waves, with examples drawn from various fields. Similar to, but simper than the book by Whitham (below).

Seelye Martin
An introduction to ocean remote sensing
Cambridge University Press 2004
GC 10.4.R4 M375 (SIO)
Comprehensive introduction to satellite remote sensing.
Robert G. Dean & Robert A. Dalrymple
Water Wave Mechanics for Scientists and Engineers
World Scientific 1984
TC 172 .D4 1991 (SIO)
An excellent textbook, but too long for a 10-week course. Emphasis on engineering applications.

Ron Bracewell
The Fourier Transform and its Applications
McGraw Hill 1965
A beautiful introduction to Fourier analysis.

John A. Knauss
Introduction to Physical Oceanography (Second Edition)
Waveland Press 2005
GC 150.5 K6 2005 (SIO)
Good introduction to all aspects of physical oceanography

GRADUATE (Advanced books for future reference)

G. J. Komen et al
Dynamics and Modeling of Ocean Waves
Cambridge University Press 1994
GC 211.2 D96 1994 (SIO)
A comprehensive summary by many authors.

G. B. Whitham
Linear and Nonlinear Waves
John Wiley 1999
QA 927 W427 (SIO and S&E)
The best book about the mathematics of all types of waves.

G. D. Crapper
Introduction to Water Waves
Ellis Horwood 1984
TC 172 C73 1984 (SIO and S&E)
A graceful introduction to the mathematics of water waves.

J. J. Stoker
Water Waves
Interscience 1957
QA 927 S874 (SIO and S&E)
A classic introduction similar to Crapper’s book.

James Lighthill
Waves in Fluids
Another classic, comparable to Whitham’s book, but more narrowly focused on water waves.
Ib A. Svendsen
Introduction to Nearshore Hydrodynamics
World Scientific 2006
TC 172 S84 2006 (SIO)
A comprehensive new book with emphasis on the surf zone.

Peter Janssen
The Interaction of Ocean Waves and Wind
Cambridge University Press 2004
GC 190.2 J36 2004 (SIO)
Excellent new introduction to waves in deep water. Very good theoretical overview.

Adrian E. Gill
Atmosphere-Ocean Dynamics
Academic Press 1982
Now somewhat out of date, this is still the best introduction to oceanography from the standpoint of linear waves.

Leo H. Holthuijsen
Waves in Oceanic and Coastal Waters
Cambridge 2007
GC 211.2 .H58 2007 (SIO)
Good book with emphasis on analysis of observations.

C. Kharif, E. Pelinovsky, A. Slunyaev
Rogue Waves in the Ocean
Springer 2009
GC 227 .K63 2009 (SIO)
Contains a very readable summary of the observations.