

Curriculum - GEOF339-Fall 2017
Advanced Dynamical Oceanography

Topics

Ekman-theory; Coastal upwelling –use of reduced gravity model	W1, 2t (første uke i September)	Kjell Arild	B-C Chap 15.4.2-4:3
Time-dependant Ekman theory	W2, 2t	Kjell Arild	G 9.1-9.3
Baroclinic modes? (gravity waves?)	W3, 4t	Kjell Arild	G 6.10-11,13
Barotropic instability	W4, 2t	Peter	B-C 10.2-10.3
Quasi-geostrophic dynamics	W5, 2t	Peter	B-C 16.1, 16.2, 16.3, 16.4
Baroclinic instability	W6, 2t	Peter	B-C 17.3, 17.6
Barotropic and baroclinic Rossby-waves	W7, 2t	Peter	B-C 16.5
Large-scale ocean circulation	W8, 2t	Kjell Arild	B-C 20.1-202
Sverdrup model	W9, 2t	Kjell Arild	B-C 20.2.2, 20.3
Time-dependent Sverdrup solution	W10, 2t	Kjell Arild	Weber 2.6-2.7
Sverdrup solution with bottom topography	W11, 2t	Kjell Arild	Lecture notes
Stommel's model of the Gulf Stream (westerly intensification)	W12, 2t	Kjell Arild	Weber 2.8
Geostrophic turbulence and eddy-induced advection	W13, 2t	Kjell Arild	Lecture notes

Textbook:

Cushman-Roisin, B. and Beckers, J.-M., 2011: Introduction to Geophysical Fluid Dynamics: Physical and Numerical Aspects, Academic Press, ISBN 9780120887590(C-B)

Supplement:

Gill,A (1982). Atmosphere-Ocean Dynamics (Copies of Chap 5-6) (G)

Weber, J.E. (2004). Dynamic Oceanography, University of Oslo (compendium) (W)

LaCasce, J.H. (2014) Atmosphere-Ocean Dynamics, University of Oslo (compendium) (LC)