

Lecture Note 1 Introduction

In ASME 434, Atmospheric Dynamics II, we will cover the following:

Date	Pres. #	Presentation Title	Remarks
1/9	1	Introduction	Overview
1/11	2	Circulation Theorems	Sec. 4.1
1/16	3	Circulation Theorems	Sec. 4.1
1/18	4	Circulation Theorems	Sec. 4.1
1/23	5	Vorticity	Sec. 4.2
1/25	6	The Vorticity Equation	Sec. 4.3
1/30	7	The Vorticity Equation	Sec. 4.3
2/1	8	Potential Vorticity	Sec. 4.4
2/7	9	Potential Vorticity	Sec. 4.4
2/9	10	Potential Vorticity in Homogeneous Fluid	Sec. 4.5
2/13	11	Ertel PV in Isentropic Coordinates	Sec. 4.6
2/15	12	Ertel PV in Isentropic Coordinates	Sec. 4.6
2/20	13	Applications of PV to the Atmosphere	Dr. Lin's Note
2/22	14	Applications of PV to the Atmosphere	Dr. Lin's Note
2/27		Review for Midterm	
3/1		Midterm	
3/5-9		Spring Break	
3/13	15	Wave Dynamics – Perturbation Method	Sec. 5.1
3/15	16	Wave Properties	Sec. 5.2
		Sound Waves	Sec. 5.3
3/20	17	Shallow-Water Waves	Sec. 5.3
3/22	18	Internal Gravity (Buoyancy) Waves	Sec. 5.4
3/27	19	Inertia-Gravity Waves	Sec. 5.5
3/29	20	Geostrophic Adjustment and Rossby Waves	Sec. 5.6, 5.7
4/3	21	Mountain Waves	Dr. Lin's Note
4/5	22	General Circulation	Sec. 6.1 & Dr. Lin's Note
4/10	23	Derivation of the QG Equations	Sec. 6.2
4/12	24	QG Prediction – Geopotential Tendency	Sec. 6.3
4/17	25	QG Prediction – QG Potential Vorticity Equation	Sec. 6.3
4/19	26	QG Diagnosis – Omega Equation	Sec. 6.4
4/24	27	Idealized Model of a Baroclinic Disturbance	Sec. 6.5
4/26	28	Hydrostatic Instability	Ch. 7
5/1	29	Baroclinic Instability	Ch. 7
5/3		Review for the Final	
5/7-11		Final Exam (1-3pm, May 10, R)	