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WMA 415: WEATHER ANALYSIS AND PREDICTION (3 Units)

Principles of objective analysis and numerical weather prediction; observational statistic, prediction of individual weather elements. Short range forecasting by various methods. Meso-scale analysis, convection systems, local winds and other weather phenomena. Barotropic and baroclinic forecast; surface analysis, analysis of constant pressure surfaces and other surfaces; cross-section analysis, numerical computation of map factors and of geostropic winds; static stability computation; satellite data and other modern techniques.

Formulation of basic equations of motion: vector from Cartesian coordinate, continuity equation hydrodynamic equation, equation of state. General circulation of the atmosphere: vorticity, divergence and deformation, static stability, circular vortex, and dynamics of mesoscace phenomena, atmospheric turbulence, and waves small-scale turbulence convection treatment of Barotropic and baroclinic waves.