Boundary Layer Meteorology
(METR 5103)
Spring 2009 Syllabus

General information:
Fundamentals of the atmospheric boundary layer dynamics and thermodynamics will be taught. Basic concepts of turbulence theory will be discussed and analyzed. Applications of this theory in the atmospheric boundary layer and mesoscale modeling will be presented. Emphasis will be placed on the state-of-the-art approaches towards parameterization and simulation of turbulent flow in the atmospheric boundary layer under different meteorological conditions and above different underlying surface types.

Time and place: Mon, Wed, Fri; 12:00 - 12:50 p.m.; Room NWC 5930.

Instructor: Dr. Evgeni Fedorovich (http://weather.ou.edu/~fedorovi/fedorovich.html)
NWC, School of Meteorology, Room 5419, Phone: 405 325 1197.
E-mail: fedorovich@ou.edu
Office hours: by appointment.

Prerequisites: METR 3113 and/or 5113, or permission of instructor.


Recommended additional texts:

Proposed grading:
Midterm exam (March): 30%. Course project: 30%. Final exam (May): 40%.

Course outline:
Place of the planetary boundary layer (PBL) in the earth atmosphere. Role of density/temperature stratification in the PBL. Observational and model data on the structure of convective, neutral, and stably stratified atmospheric boundary layers. Diurnal cycle of the PBL. Interaction between the PBL and larger-scale atmospheric processes.


Note: Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact Dr. Evgeni Fedorovich personally to discuss accommodations necessary to ensure full participation and facilitation of educational opportunities.