MEA 715: Dynamics of Mesoscale Precipitation Systems
Fall Semester 2009

Professors:	Dr. Matthew Parker Jordan Hall 5149 513.4367 mdparker@ncsu.edu	Dr. Sandra Yuter Jordan Hall 5145 513.7963 sandra_yuter@ncsu.edu

Class meetings: Tues., Thurs., 3:00–4:15 PM, Jordan Hall 1109

Office hours: by appointment

Pre–requisites Undergraduate dynamics (e.g. MEA 421–422) and cloud physics (e.g. MEA 412)

Required text: *Cloud Dynamics*, by Robert Houze, Jr.

Class website: http://www.meas.ncsu.edu/mdparker/courses/mea715/index.html
links to handouts, images from class, help on assignments, etc.

Student learning outcomes: By the completion of this course, you should be able to:

1) recognize and apply the basic governing equations for the dynamics and microphysics of clouds and precipitation systems,
2) explain an assortment of the foundational theories/results across this content area
3) explain the basic capabilities and limitations of instruments and models to address research problems across this content area
4) identify and explain fundamental processes in precipitation systems on the microscale, cloud–scale, and mesoscale
5) evaluate the quality and rigor of studies on clouds and precipitation systems in the literature and in conference presentations

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Course philosophy: This is an elective graduate–level course. It is expected that all students will stay current with reading and assignments throughout the semester to maximize their benefit from the course. If you have doubts about your ability to complete the course, please consult with us.

Special accomodations: You have the right to appropriate, confidential accomodations of a disability. "Reasonable accommodations will be made for students with verifiable disabilities. In order to take advantage of available accommodations, students must register with Disability Services for Students at 1900 Student Health Center, Campus Box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.1)"

Assessments: Your grade will be determined by your performance on the following: roughly 3–5 homework assignments; roughly 3–5 quizzes; and, three formal examinations (two midterms and a final). Most of these assessments will be "open book", with an emphasis on understanding, not memorization.

Grading criteria: 50% from your exam scores, weighted equally; 25% from your quiz scores, weighted equally; and, 25% from your homework scores, weighted equally. If we have comparatively more/fewer homeworks/quizzes, we will adjust the weights accordingly. Your final letter grade will follow the familiar scale: $\geq$93% A, 90–92 A-, 87–89% B+, 83–86% B, 80–82% B-, etc. We reserve the right to adjust this at the end if the grade distribution looks "too low". University regulations concerning withdrawals and incompletes will be strictly enforced.

Academic integrity: It is expected that students are versed in the Code of Student Conduct Policy, and will abide by it. Repeated here are the provisions relating to academic dishonesty.

1. Academic dishonesty is the giving, taking, or presenting of information or material by a student that unethically or fraudulently aids oneself or another on any work which is to be considered in the determination of a grade or the completion of academic requirements or the enhancement of that student's record or academic career.

2. A student is guilty of a violation of academic integrity if he or she:

- represents the work of others as his or her own;
- obtains assistance in any academic work from another individual in a situation in which the student is expected to perform independently;
- gives assistance to another individual in a situation in which that individual is expected to perform independently;
- offers false data in support of laboratory or field work.

You have committeed academic dishonesty if you give, receive, or tolerate others' use of unauthorized aid. Violations of academic integrity will result in automatic failure of the class and referral to the proper university officials. The work that you submit must be your own and you must have completed it specifically for the particular assignment in this class. Make no assumptions: please contact me if you are unsure about whether I have authorized a source of aid.