ATMS 499.002 Undergraduate Research in Atmospheric Sciences Fall 2010

DESCRIPTION: This course is to provide qualified students with research experience in atmospheric sciences. The students will perform research under the supervision of research advisors on various projects. Students will learn research methodology, problem-solving and analytical skills, communication and presentation capabilities, and professional ethics. Students are required to complete assigned tasks satisfactorily at the end of semester.

COORDINATOR: **Dr. Huo-Jin (Alex) Huang,** RBH 236B, Dept. of Atmospheric Sciences, UNCA
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Office Hours: M W 9:45-10:15 am, 1-1:30 pm; T R 2:40-3:10 pm
(Or by appointment, but walk-in is always welcome)

TEXT: **NONE.**

SCHEDULE: As determined by the students and research advisor.

EXAMS: **NONE.**

GRADING: Your grade will be given by your research advisor, and it will be based on your research performance, advisor's evaluation, and the quality of your project outcome.

STUDENT LEARNING OUTCOMES: Upon the completion of this research course, students are expected to achieve the following outcomes:

- To learn scientific methodology for weather data collection and analysis;
- To develop problem-solving and analytical skills;
- To keep updated meteorological knowledge and research aspects;
- To be motivated, independent and creative in research;
- To learn working with others in a project-focused research environment;
- To establish professional and healthy work ethics;
- To complete assigned tasks in a timely and satisfactory manner;
- To be able to communicate effectively and professionally; and
- To learn to deal with challenges and critics.

Note: These student learning outcomes are correlated to ATMS SLOs (A), (C), (D), (E), (F) and (G) which are listed below and also at http://www.atms.unca.edu/slos.shtml.

The student learning outcomes (SLOs) for graduates of the ATMS Department can be generalized to possessing

a) accurate scientifically-based conceptual models of atmospheric structure and evolution on multiple spatial and temporal scales,

b) an understanding of mathematical devices applied to governing laws that determine the evolution of atmospheric structures,

c) an ability to communicate these conceptual models orally and through writing to a variety of audiences ranging from the layperson to experts in the atmospheric sciences,

d) an ability to make a significant contribution to a team-based research effort,

e) the necessary problem-solving skills to address new and interesting challenges presented by atmospheric structures to a smoothly-functioning society,

f) a curiosity about the natural world that motivates the student to continue their learning in graduate school and beyond the years immersed in formal education, and

g) an ability to recognize disagreements among scientists - being able to identify points of contention, analyze evidence, and respectfully address differences between competing scientific theories.