

TO: Graduating Senior of the Department of Atmospheric Sciences
FROM: Atmospheric Sciences Faculty
SUBJECT: **Senior Comprehensive Examination**

The UNCA catalog states under special departmental requirements that satisfactory competency must be demonstrated in a comprehensive examination by candidates expecting to graduate from the UNCA Department of Atmospheric Sciences. The results must be reported to the Registrar by 29 April 2016.

The examination will consist of three parts described below. Each part will be taken as a separate examination, i.e., you must perform adequately on each part to pass the comprehensive examination. **A score of 70% or higher for each of Sections I, II, and III is considered as passing.**

- I. **General Comprehension.** This section will be a collection of general atmospheric sciences questions for which short answers and multiple-choice questions are appropriate. Much of the material for these questions will be from the core required ATMS courses (e.g. Introduction to Meteorology, Weather Analysis, Thermodynamics, Kinematics and Dynamics, Physical Meteorology, Synoptic Meteorology). This portion will be **closed book** and will be on **Friday, 25 March 2016 from 1:30 to 2:30 pm.**
- II. **Problem Solving and Communication.** Each degree candidate will be tested on two questions from each of three subject groups; Group A, Dynamics and Thermodynamics, Group B, Climatology and Observations, and Group C, Physical and Synoptic Meteorology, for a total of six questions to be solved during Section II of the senior comprehensive exam. Each of the three subject groups will have four problems from which the two examination questions will be chosen. The problems will not be designed to test memorization of equations. Rather, they will require practical applications of concepts. The intent is to test the ability of the candidates to rationally apply the concepts they learned to everyday meteorological problems. Because the real world requires communication skills, candidates will be expected to answer the problems by clearly showing the steps and summarizing the assumptions and results. Included in the judgment of adequate performance will be accuracy, spelling, proper sentence structure, clarity of presentation, and logic. This portion will be **open book** and will follow Section I (**2:45 to 5 pm**). The **5 pm** time will be firm, i.e., no extra time will be given.
- III. **Map Discussion.** Each candidate is expected to demonstrate a fluency in operational meteorology and the ability to communicate to the public orally. To this end, a map discussion will be required. Each map discussion will be **limited to fifteen (15) minutes plus necessary time (~ 5 minutes) for questions and answers.** The map discussions will take place in a single day in which you'll have a set time beforehand to view relevant maps and images for the case study via web links and to assemble your map discussion presentation. The presentations for all students in ATMS 411 will take place from 8:30 am to 4:30 pm on Friday **15 April 2016** in Robinson Hall Room 238. The presentation should be tailored to an audience having intellectual capabilities above that of the average TV viewer. Grading will be on presentation skills, clarity, completeness, efficiency, logic and ability to field questions. The grading sheet on the ATMS 411 course web page will give you an idea of the objective criteria used for evaluation.

If a grade of less than 70% is received in Sections I or II, the candidate will have an opportunity to retake that section on **1 April 2016**. The retake of Section I will involve a random replacement of one-third of the original questions with previously unseen questions. Failure of Section II, defined as an *overall* score of less than 70%, will require students to re-take the failed subject group test question(s) in only the failed subject group(s), **plus** one new and previously unseen question within the same subject group. Failed subject groups are those with an average score of less than 70% and failed questions within subject groups are only those receiving a score of less than 70%. We do not expect rote memorization as preparation for the comprehensive examination. What is expected is fluency in atmospheric sciences. This includes the ability to recognize one's limitations and strengths, and to communicate accordingly. Each candidate is encouraged to discuss the preparation of the comprehensive examination with the faculty. Each student will have **two** opportunities to pass each section of the examination during the spring 2016 semester. If necessary, any opportunity to pass the examination beyond two attempts will not be offered until the upcoming summer (Term I) session, which will require the associated registration fees.