

Syllabus for ATMS 111 – Understanding the Atmosphere – Lab Section – Fall 2014

Date	Topic	Reading/Homework*
W 20 Aug 2014	Introduction/ Lab#1 – The Sun	Prep – Lab#1
M 25 Aug		Prep – Lab#1 exercises due
W 27 Aug	Lab#1 – The Sun	Field work - UNCA
M 1 Sep		Lab#1 write-up due
W 3 Sep	Lab#2 – Air Temperature	Prep – Lab#2
M 8 Sep		Prep – Lab#2 exercises due
W 10 Sep	Lab#2 – Air Temperature	Field work - UNCA
M 15 Sep		Lab#2 write-up due
W 17 Sep	Lab#3 – Humidity	Prep – Lab#3
M 22 Sep		Prep – Lab#3 exercises due
W 24 Sep	Lab#3 – Humidity	Field work - UNCA
M 29 Sep		Lab#3 write-up due
W 1 Oct	Laboratory Exam#1	
W 8 Oct	Lab#4 – Precipitation	Prep – Lab#4
M 13 Oct		Prep – Lab#4 exercises due
W 15 Oct	Lab#4 – Precipitation	Field work – Ski Cataloochee
M 20 Oct		Lab#4 write-up due
W 22 Oct	Lab#5 – Air Pressure	Prep – Lab#5
M 27 Oct		Prep – Lab#5 exercises due
W 29 Oct	Lab#5 – Air Pressure	Field work – Purchase Knob
M 3 Nov		Lab#5 write-up due
W 5 Nov	Lab#6 - Wind	Prep – Lab#6
M 10 Nov		Prep – Lab#6 exercises due
W 12 Nov	Lab#6 - Wind	Field work – Greer, SC (NWS)
M 17 Nov		Lab#6 write-up due
W 19 Nov	Laboratory Exam#2	

*assignment shall be completed before class meets on this date

Description

A laboratory course designed specifically for the non-ATMS major student who is interested in learning about aspects of the earth's atmosphere to a greater depth than can be gained in a lecture hall. A significant portion of the laboratory sessions will be spent outside observing weather elements and an appreciation of the challenges in making accurate measurements will be gained. ATMS 111 satisfies the LAC laboratory science requirement.

Outline

- Laboratory#1 – The Sun
- Laboratory#2 – Air Temperature
- Laboratory#3 – Humidity
- Laboratory#4 – Precipitation
- Laboratory#5 – Air Pressure
- Laboratory#6 – Wind

Grading

Attendance	14%
Preparatory Exercises	11%
Laboratory Exam I	20%
Laboratory Exam II	20%
Laboratory Reports	35%
Total	100%

92% < total score ≤ 100%	A
90% < total score ≤ 92%	A-
88% < total score ≤ 90%	B+
82% < total score ≤ 88%	B
80% < total score ≤ 82%	B-
78% < total score ≤ 80%	C+
72% < total score ≤ 78%	C
70% < total score ≤ 72%	C-
68% < total score ≤ 70%	D+
60% < total score ≤ 68%	D
total score ≤ 60%	F

Student Learning Outcomes

Each ATMS 111 student will

- gain accurate scientifically-based conceptual models of atmospheric structure and evolution on multiple spatial and temporal scales,
- develop an ability to communicate these conceptual models through writing,
- develop an ability to make a significant contribution to a team-based research effort, and
- develop problem-solving skills.

Attendance

Attendance for a laboratory class is critical since the number of meeting times in ATMS 111 is rather limited (once per week) during the semester. Students will be working in groups in ATMS 111 so that others in the class will be counting on you to make a solid contribution to their team research project. For this reason, attendance will be taken and will count toward a significant portion (14%) of the final course grade. One absence will result in the loss of half of the attendance score (7%) and two or more absences will result in an attendance score of **zero**. Exceptions will be made for university-sanctioned events (e.g., athletic events, undergraduate research-related trips) or a **documented** illness or family emergency. In the event of an acceptable absence, the student will submit a written plan to Prof. Miller describing how the missed work will be made up and the deadline for turning in the make-up work.

Preparatory Exercises

Bi-weekly preparatory exercise assignments will be completed by each individual in ATMS 111 and are designed to encourage the development or “re-awakening” of skills necessary for an upcoming laboratory exercise. Consulting with other students on the exercises is permissible but each must turn in their own work. Preparatory exercises are due the **Monday** after they have been assigned.

Laboratory Exam I and II

The mid-term laboratory exams I and II will primarily be testing material relevant to Laboratory Reports #1-3 and #4-6, respectively. Testable material will also include concepts presented on the corresponding preparatory exercises. There will be NO final examination in ATMS 111. Instead, the final exam period will be used as a debrief session to review course material from a “big picture” perspective.

Laboratory Reports

Scientists must provide documentation for each experiment that they undertake so that successive generations can build on their findings. In order to build on past findings, it is critical that the results be reproducible. This requires that scientific papers provide a detailed description of what was done in order to achieve the observed results. Each laboratory report in this course will follow an outline containing the sections; (1) Background and Introduction, (2) Methodology, (3) Results, (4) Conclusions, and (5) References. Laboratory reports must be type-written and double-spaced so that they can be easily read and graded. Recall that the purpose of these reports is “to learn how scientists communicate their findings with colleagues via the written word.”

Assignment/Exam Policy

Assignments are to be handed in before the start of lecture on the date they are due. Assignments handed in after the start of lecture are considered late until 4:30 pm on the date they are due and will have an automatic 10% deduction from their final score. Assignments handed in after 4:30 pm on the date they are due will receive no credit.

Exams are written tests and will be taken on the date they are scheduled, unless circumstances (e.g. medical or loss in the family) warrant. Make-up exams for special circumstances will occur at a mutually agreed upon time outside of the usual class meeting time.

Instructor

Doug Miller
232-5158

<http://www.atms.unca.edu/dmiller/courses/index.htm>
dmiller@unca.edu

Textbook

Laboratory notebook – composition notebook is required (please **no** spiral notebooks)

Reference - “Essentials of Meteorology An Invitation to the Atmosphere” by C. Donald Ahrens (sixth edition)

Disabilities

Contact Prof. Miller early in the course if you have a disability that requires special accommodation.

Academic Integrity

Cheating or plagiarism results in a failed assignment or exam on the first infraction. A second infraction results in course failure and a report to the UNCA administration. See <http://catalog.unca.edu/> and click on “Academic Policies and Procedures.” Read “Student Responsibilities” for a refresher on the UNCA policy.