ATMS 117: Introduction to Meteorology (Spring 2014 - 3 credits)

Instructor: Dr. Heather Holmes
Class Meetings: MWF, 1:00-1:50pm, SLH 3
Email: hholmes@unr.edu
Office: Leifson Physics RM 205 (775-784-6712)
Office Hours: M & W 2-3pm, Tu 4-5pm, and at other times by appointment
Web Content: UNR Web Campus (https://wcl.unr.edu/), login with UNR netID

Required Materials

Clickers: Clickers will be used on a weekly basis, please purchase a clicker from the bookstore and bring it to class. (NOTE: there is a $15 rebate so remember to send in your receipt!)

Course Description
This course will explore the behavior of the atmosphere. Emphasis will be placed on the physical processes in the atmosphere including atmospheric composition, weather patterns, clouds, and climate change. Atmospheric processes cover a large range of scientific topics and impact the every day lives of people all over the world. The scientific topics presented in class will be related to current and past events to help develop a deeper understanding of the science. By the end of the course you should be able to conceptually understand fundamental atmospheric processes.

This course fulfills the Natural Science Core Curriculum for Group B. Therefore the overall learning objective for the course is for you to gain an understanding of the scientific method and how it can be applied in atmospheric sciences. This will be accomplished with lectures, in-class demonstrations and homework assignments. There are students from many different areas of study in this course so it is my goal to find ways to make the course interesting. To help achieve this I have incorporated two projects (Final Project and Weather Journal) into the course to incorporate individualism and encourage creativity in the assignments. Please take advantage of these opportunities and classroom discussions to creatively express yourself and your interest in meteorology.

Prerequisite: Completion of the Core Math or SAT of 610 or ACT of 27 or corequisite
Corequisite: MATH 127 R or MATH 128 or MATH 176 or MATH 181
This course will require some math concepts (adding, subtracting, multiplying, dividing, some equation solving) but my goal is to not make it mathematically exhaustive. If you are having problems or have any questions with the math being used please come to my office hours or schedule a time to meet with me.

Assessment and Grading
Class Participation (10%): Class participation will be graded by in-class use of the clickers. There will be points for attendance and quiz answers and both will come from clicker answers.

Homework (10%): Homework assignments will be due approximately every two weeks and will cover the preceding two weeks of material. Typically, the assignments will cover material from 2-3 chapters of the textbook and will be a mix of multiple choice, short answer, numerical problems (math based) and critical thinking questions.

Weather Journal (10%): You will keep a one-week journal including daily web or newspaper weather forecast information. In the journal you will write a commentary on the predicted versus actual weather. This weather journal will be turned in twice during the semester, during the first three weeks of class and the last three weeks. Each time your weather journal is turned in it should include one-week of daily observations (two weeks total for the semester). The purpose of this is to compare your weather commentary from the beginning and end of the semester.
**Final Project (10%)**: In place of a final exam we will use the two hour final exam meeting to meet as a class to give presentations for a final project. This will be a group project where teams of 3-4 students will give 5-minute presentations and submit a 1-2 page written report. Details regarding the presentations and report will be given in a separate handout in class after spring break. My goal is to keep the project fun and let you explore some creative topics!

**Midterms Exams (60%)**: Three exams will be given each worth 20% for a total of 60% of the course grade. Exams will primarily be multiple choice questions but this does not mean there are no numerical problems that require a calculator, so remember to bring one with you! Unless otherwise stated exams will be closed notes and closed book. The tentative dates for each exam are listed below, including the material each exam is expected to cover. Note, this is subject to change and exam dates will be confirmed in the lecture. The class meeting prior to the exam date will be reserved for an exam review, if there is specific material you would like reviewed please come to my office hours and let me know.

- Midterm Exam 1 (20%): Chapters 1-5, Friday February 28th
- Midterm Exam 2 (20%): Chapters 6-9, Friday April 11th
- Midterm Exam 3 (20%): Chapters 10-11, 13 & 16, Monday May 5th

**Final Exam Meeting Time**: Monday May 12th, 10:15am -12:15pm.

**Final letter grades are assigned as follows:**

- A = 93% or higher; A- = 90-92.9%; B+ = 87-89.9 %; B = 83-86.9 %; B- = 80-82.9 %;
- C+ = 77-79.9 %; C = 73-76.9 %; C- = 70-72.9 %; D+ = 67-69.9 %; D = 63-66.9 %;
- D- = 60-62.9 %; F = < 60 %

**Learning Objectives/Outcomes**

1. As a result of the homework assignments and class participation quizzes students will use quantitative reasoning to solve numerical problems, read maps, and interpret graphs.

2. As a result of the weather journals students will illustrate their understanding of natural phenomena by observing and describing atmospheric phenomena and weather.

3. The final project will give students a global context to physical science by requiring critical analysis to evaluate how meteorology has had an impact on natural resources and cultures in various regions of the world.

**Additional Information**

**Classroom Behavior**: All students are expected to behave in a professional and respectful manner. This includes (but is not limited to) being respectful of your peers during classroom discussions, being a team player on group projects, showing up on time to class, no cell phones in class, no listening to music, and no typing on laptops during lecture. Any behavior that disrupts the class is not allowed.

**Special Needs**: Any student with a disability needing academic adjustments or accommodations is requested to contact the instructor as well as the Disability Resource Center in Thompson Student Services107 as soon as possible to allow for appropriate arrangements.

**Academic Success Services**: Your student fees cover use of -

- Math Center (784-443 or www.unr.edu/mathcenter/)
- Tutoring Center (784-6801 or www.unr.edu/tutoring/)
- University Writing Center (784-6030 or www.unr.edu/writing_center)

These centers support your classroom learning; it is your responsibility to take advantage of their services. Seeking help outside of class helps you develop as a responsible and successful student.

**Recording**: Surreptitious or covert videotaping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written
permission of the instructor. In order to accommodate students with disabilities, some students may have been
given permission to record class lectures and discussions. In those cases, students should understand that their
comments during class might be recorded.

Academic Honesty: All coursework must meet the UNR Standards for Academic Policy
Working in groups on the homework assignments is encouraged but each student must turn in their own work.
Any homework that is directly copied form another student or copied from a solutions manual will not be given
any credit. As the homework deadlines are close to exam dates late homework will not be accepted for grading.

Missed Exam Policy: It is your responsibility to be on time for tests, and to contact your instructors well before
the test if you absolutely cannot attend. In most cases, it is possible to take a test before its scheduled date, but it is
not possible to make it up afterwards. Students who arrive after the first person has completed the test will
automatically receive a zero on that exam or quiz. Make-up examinations will be given only with a medical
doctor’s note requesting permission in the case of illness, or a death certificate in the case of a family member
death.

Tentative Course Schedule: ATMS 117 Spring 2014

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<thead>
<tr>
<th>Week #</th>
<th>Dates</th>
<th>Chapter Topic</th>
<th>Notes</th>
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<tbody>
<tr>
<td>1</td>
<td>22-24 Jan.</td>
<td>Ch1: Earth System Intro/Atmospheric Composition</td>
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<td>3</td>
<td>3-7 Feb.</td>
<td>Ch3: Seasonal and Daily Temperatures</td>
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<td>4</td>
<td>10-14 Feb.</td>
<td>Ch4: Humidity</td>
<td>10 Feb., HW #1 Due</td>
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<td>5</td>
<td>19-21 Feb.</td>
<td>Ch5: Fog, Condensation</td>
<td>19 Feb., Project #1a Due</td>
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<td>6</td>
<td>24-28 Feb.</td>
<td>Ch6: Atmospheric Stability</td>
<td>24 Feb., HW#2 Due</td>
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<td>7</td>
<td>3-7 March</td>
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<td>8</td>
<td>10-14 March</td>
<td>Ch7: Precipitation</td>
<td>14 March, HW#3 Due</td>
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<td>9</td>
<td>17-21 March</td>
<td>No Class, Spring Break!</td>
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<td>10</td>
<td>24-28 March</td>
<td>Ch8: Winds, Air Pressure</td>
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<td>11</td>
<td>31-4 April</td>
<td>Ch9: Local Winds</td>
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<td>12</td>
<td>7-11 April</td>
<td>Exam #2 (11 April)</td>
<td>7 April, HW#4 Due</td>
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<td>13</td>
<td>14-18 April</td>
<td>Ch10: Global Winds</td>
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<td>14</td>
<td>21-25 April</td>
<td>Ch11: Air Masses, Fronts</td>
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<td>15</td>
<td>28- May</td>
<td>Ch13, 16: Forecasting, Climate Change</td>
<td>28 April, HW#5 Due</td>
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<td>16</td>
<td>5 May</td>
<td>Exam #3 (5 May)</td>
<td>5 May, Project #1b Due</td>
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<td>Final</td>
<td>12 May</td>
<td>Class Presentations 10:15am-12:15pm</td>
<td>Final Project Due</td>
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