

Peru State College
EARTH SCIENCE 240—METEOROLOGY AND CLIMATOLOGY
Syllabus

Instructor: Mr. Evan Kuchera, adjunct
Office Hours: By appointment
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Required Textbook: Essentials of Meteorology, Fifth Edition, by C. Donald Ahrens
Required Software: Microsoft Word. Access to a printer and scanner/camera will be needed on one occasion.

Course Objective: Gain a broader understanding of scientific principles and applications through an introductory study of meteorology and climatology.

Description: Basic scientific, meteorological and climatological principles will be discussed and applied. Topics covered include atmospheric composition, radiative transfer, moisture and precipitation processes, and common circulation patterns. Special topics include winter storms, thunderstorms, tornadoes, hurricanes, pollution, and climate change. Labs will focus on applying these principles to real weather and climate situations, including an introduction to weather analysis and forecasting.

Prerequisites: None

Upon completion of this course you should be able to:

1. Understand the benefits and limitations of the scientific process.
2. Be able to diagnose and think critically about the assumptions that underlie everything you do.
3. Understand the basic physical mechanisms that are relevant in the atmosphere.
4. Analyze and make basic forecasts of the weather through applying meteorological methods and physical principles to data found on the internet.
5. Understand how weather patterns and physical processes create different climates.

At the beginning of the course, we will discuss how these objectives fit into the College's and School's mission and goals.

Expectations & Instructional Approach:

This online course is designed to reward effort and demonstrated critical thinking. No one who has completed all the assignments has ever failed this course. So while some of the material may seem quite challenging, hard work will be rewarded even if imperfect. To earn a top grade in this course, you will be expected to apply learned facts and ideas to new situations where it may not be obvious which facts/ideas might be relevant.

Late Policy:

No late work is accepted. You can pre-coordinate an extension if you have an illness or other major disruption, **but you must contact me more than 24 hours before the deadline.** Please complete your work well ahead of the weekly deadlines to ensure your grade is not impacted by unexpected disruptions.

Grade Scale:

90-100	A
85-89	B+
80-44	B
75-79	C+
70-74	C
65-69	D+
60-64	D
59-0	F

Standard College Policies in light gray text. Please read carefully if you have not seen them before.

College's Incomplete Coursework Policy

To designate a student's work in a course as incomplete at the end of a term, the instructor records the incomplete grade (I). Students may receive this grade only when serious illness, hardship, death in the immediate family, or military service during the semester in which they are registered prevents them from completing course requirements. In addition, to receive an incomplete, a student must have completed substantially all of the course's major requirements.

Unless extenuating circumstances dictate otherwise, students must initiate requests for an incomplete by filling out an Incomplete Grade Completion Contract, which requires the signature of the student, instructor, and Dean. The Incomplete Grade Completion contract cites the reason(s) for the incomplete and details the specific obligations the student must meet to change the incomplete to a letter grade. The date by which the student agrees to complete required work must appear in the contract. The Dean, the instructor, and the student receive signed copies of the Incomplete Grade Completion Contract.

Even if the student does not attend Peru State College, all incomplete course work must be finished by the end of the subsequent semester. Unless the appropriate Dean approves an extension and if the student does not fulfill contract obligations in the allotted time, the incomplete grade automatically becomes an F.

College's Academic Integrity Policy

The College expects all students to conduct themselves in a manner that supports an honest assessment of student learning outcomes and the assignment of grades that appropriately reflect student performance. It is ultimately the student's responsibility to understand and comply with instructions regarding the completion of assignments, exams, and other academic activities. At a minimum, students should assume that at each assessment opportunity they are expected to do their own original academic work and/or clearly acknowledge in an appropriate fashion the intellectual work of others, when such contributions are allowed. Students helping others to circumvent honest assessments of learning outcomes, or who fail to report instances of academic dishonesty, are also subject to the sanctions defined in this policy.

Instances of academic dishonesty may be discovered in a variety of ways. Faculty members who assign written work ordinarily check citations for accuracy, run data base and online checks, and/or may simply recognize familiar passages that are not cited. They may observe students in the act of cheating or may become aware of instances of cheating from the statements of others. All persons who observe or otherwise know about instances of cheating are expected to report such instances to the proper instructor or Dean.

In order to promote academic integrity, the College subscribes to an electronic service to review papers for the appropriate citations and originality. Key elements of submitted papers are stored electronically in a limited access database and thus become a permanent part of the material to which future submissions are compared. Submission of an application and continued enrollment signifies your permission for this use of your written work.

NSCS Board of Trustees Policy 4220 states that each College “. . . will establish a distance learning assessment policy that will include, at a minimum, a substantial culminating experience that is proctored.” Peru State College's policy is that each course that is offered entirely online will feature a proctored final exam that substantially measures the extent the course's stated learning objectives are achieved. Online course syllabi will clearly state that, regardless of grades earned previously, the proctored final exam must be passed in order to receive credit for the course. Courses which feature graded site-based activities (e.g., teaching demonstrations) and/or video-taped presentations that occur near the end of the term, and that are designed to substantially assess the achievement of learning objectives, can be considered in compliance with this policy. Project-based capstone and graduate courses utilizing real-time discussions held by web-cam, phone or in person with the faculty member as part of the assessment process can also be considered in compliance with this policy.

Should an occurrence of academic misconduct occur, the faculty member may

assign a failing grade for the assignment or a failing grade for the course. Each incident of academic misconduct should be reported to the Dean and the Vice President for Academic Affairs (VPAA). The VPAA may suspend students for two semesters found to be responsible for multiple instances of academic dishonesty. The reason for the suspension will be noted on the student's transcript.

A faculty member need present only basic evidence of academic dishonesty. There is no requirement for proof of intent. Students are responsible for understanding these tenets of academic honesty and integrity. Students may appeal penalties for academic dishonesty using the process established for grades appeals.

Title IX Compliance Notice

Peru State College is an equal opportunity institution. PSC does not discriminate against any student, employee or applicant on the basis of race, color, national origin, sex, disability, religion, or age in employment and education opportunities, including but not limited to admission decisions. The College has designated an individual to coordinate the College's nondiscrimination efforts to comply with regulations implementing Title VI, VII, IX, and Section 504. Inquiries regarding non-discrimination policies and practices may be directed to Eulanda Cade, Director of Human Resources, Title VI, VII, IX Compliance Coordinator, Peru State College, PO Box 10, Peru, NE 68421-0010, (402) 872-2230.

Students requesting reasonable accommodation and tutoring services should contact the Center for Achievement and Transition Services (CATS).

Schedule:

All assignments are due weekly by Saturday at 11:00 PM. 1,000 points can be earned in the following areas:

- Quizzes over textbook readings (260 points)
- Discussion (240 points)
- Internet research (40 points)
- Labs (360 points)
- Final exam (100 points)

Week 1 Chapters 1-2, Lab 1, Start Discussion 1, Internet 1

Week 2 Chapters 3-5, Lab 2, Finish Discussion 1, Live Discussion A, Internet 2

Week 3 Chapters 6-8, Lab 3, Start Discussion 2, Internet 3

Week 4 Chapter 9, Lab 4, Finish Discussion 2, Live Discussion B, Internet 4

Week 5 Chapters 10-11, Labs 5-6, Start Discussion 3, Internet 5

Week 6 Chapter 12, Lab 7-8, Finish Discussion 3, Internet 6

Week 7 Chapter 13, Lab 9, Start Discussion 4, Internet 7

Week 8 Chapter 14, Final Exam (ch 1-14), Labs 10-12, Finish Discussion 4, Internet 8

Weekly exams and final exam—There will be a 20 point quiz over each chapter from 1-13, and a 100 point final exam covering chapters 1-14. These are timed (30 mins per quiz, 90 mins for the final) and one attempt only, but open book. If you feel there is a question that is wrong or unclear, email me and I'll look into it.

Discussion—On odd numbered weeks you will respond to my initial question by the Saturday deadline. On Sunday I will post a follow-up question to your individual thread, and you will be required to respond by the next weekly deadline. You will also be required to respond to at least three other students at any time during the two-week period. I ask everyone to work a little bit ahead (i.e. don't wait until the deadline) as much as possible so that worthwhile interaction can occur.

Each discussion (1-4) will be worth 50 total points. This will be the "Discussion" portion of your final grade. If your thread, response, and comments are all on topic and on time, you'll get 25 points. The remaining 25 points will be given based on the quality of your thoughts--I plan to be generous provided you put forth effort. I will give bonus points at my discretion and frequently do so when a high level of thought or effort is displayed.

Guidelines for quality responses:

- Clear, concise, logical prose
- Citation of supporting facts where applicable
- Relevance to the topic at hand
- More than just "I agree" on responses

Labs

- Lab 1--scientific principles and introduction to zulu time
- Lab 2--internet tools for weather analysis and forecasting
- Lab 3--surface and upper air chart analysis
- Lab 4--winter storm case study
- Lab 5--severe thunderstorm case study
- Lab 6--weather forecast exercise
- Lab 7--live lab—weather forecasting
- Lab 8--internet tools for climate analysis and forecasting
- Lab 9--snow climatology analysis
- Lab 10--climate case study--1930's dust bowl
- Lab 11--climate case study--2005 and 2006 hurricane seasons
- Lab 12--live lab—applied climate

Live discussions/labs—Four times during the term you will be asked to participate in a live chat. The first two (weeks 2 and 4) will be discussions A and B (20 pts each) on

defining science and reading weather charts. The last two will be labs (30 pts each) on weather forecasting and climate applications in weeks 6 and 8. All live discussions and labs will be 60 minutes in duration. These are not meant to be tests, but more like group projects.

A variety of times are available--sign up for one that is convenient for you using the links in each week's assignment folder. No more than 8 people per lab please. Grading will be largely be based on participation—are you offering thoughts or answers? If you don't have answers, are you asking questions?

There will be one make-up assignment if you have to miss a live discussion/lab for any reason. You will lose all points for any live discussions/labs missed beyond one.

Internet Weather Research—Each week you will submit some examples of weather from the internet, to gain practice and familiarity. Points will be given for this section at the end of the course (40 total). You will post the images and explain what they are and what they show each week per the below:

Week 1-2: Interesting weather pictures

Week 3-5: Observations (surface, satellite, radar, etc)

Week 6-8: Computer model forecasts

I will post examples to give you an idea of what is expected. You will need to post once per week to receive full credit.

The instructor reserves the right to modify any aspect of the course syllabus or content. Any modifications will be communicated to students in advance.