

# Geography 121: Weather and Climate

Fall 2013 M, W, F, 11:30 – 12:30 a.m., Sage 1210

**Instructor:** Colin Long; 4457 Sage; 424 2182; longco@uwosh.edu

**Office Hours:** Tuesday 10:00 am to 1:00 pm, Wednesday 2:00 to 4:00 pm

**Recommended Text:** GEOS Physical Geography 1 Weather and Climate (Pearson Custom Library) Physical Geography 1:

**Required Text:** Weather and Climate (GEOG 121) Laboratory Manual Department of Geography)

This course is intended to provide you with a basic understanding of the components and processes that create weather and climate on the earth. Most of you will not follow up this course with extensive study of climate as your main focus in education, but an understanding of these principals will allow you to make better sense of the world around you. This course is akin to another piece of the puzzle that is the world we inhabit. Each area that you study such as art, history, sociology, math, biology, etc. provides you with another part of the earth's human or physical landscape. The strength of the liberal arts approach is that it gives you the opportunity to see how all the pieces, although seemingly unrelated, fit together. I want to encourage you to think about weather and climate in terms of its affect on the other subject areas that you are studying. I believe that it will soon be clear that there are significant links and that by looking for those relationships you will see the value of the liberal arts education that you're receiving and that the world we inhabit really is a very connected place.

**Student Learning Outcomes:** By the end of this course you should be able to:

1. Explain how solar radiation distribution changes from place to place and the effect it has on climate.
2. Explain the processes that cause wind and precipitation.
3. Describe how general atmospheric circulation patterns and other regional atmospheric patterns affect seasonal weather from place to place
4. Critically evaluate the impact of human activities on climate.

**Assignments:** All reading assignments should be done before the class meeting. Labs will be held every week except for the first week, Thanksgiving week, and the last week of the semester.

**Assessment:** Your grade will be based on in-class quizzes, in-class exams, a lab exercise, and lab exams. There will be 8 in-class quizzes during the semester. Only your 6 highest scores will count toward your grade. There will be no opportunities to take a missed in-class quiz. The quizzes like the exams will consist of multiple-choice questions and will cover subjects discussed in lecture and the readings. The quizzes will focus on recently covered material. In-class exams will be cumulative in scope. There will be one graded lab exercise and 2 lab exams which will cover material examined in the lab sessions. Class points will be distributed in the following fashion: Points earned in lecture are from in-class quizzes and three multiple choice exams. In-class quizzes: the 6 highest scores from the 8 quizzes with each quiz worth 2.5 points for a total of 15 points, 1<sup>st</sup> exam = 15 points; 2<sup>nd</sup> exam = 20 points; Final exam = 25 points for a total of 75 points from in-class assessment. Points earned in Labs: Lab exam 1 = 10 points;

Global Circulation Lab = 2.5 points (Key assignment for USP students) Lab exam 2 = 12.5 points) for a total of 25 points from Lab assessment. The overall class total = 100 point.

**Evaluation:** There will be no curve. Students will strive for mastery rather than competing against each other. A = 100-93.0 points, A- = 92.9-90.0 points, B+ = 89.9-87.0 points, B = 86.9-83.0 points, B- = 82.9 – 80.0, C+ = 79.9 – 77.0 points, C = 76.9 – 72.0 points, C - = 71.9-69.0 points, D+ = 68.9-66.0 points, D = 65.9-63.0 points, D- = 62.9 – 60.0 points, F = less than 60 points. Without acceptable documentation of illness or other emergency, failure take an exam at the appointed time will result in a score of 0 for that exam. There will be no extra credit opportunities in this class.

**Early Alert:** During the 5<sup>th</sup> week of classes you will receive an email indicating your overall progress in this course. This process is called “Early Alert.” Early Alert is designed to help you evaluate your study skills and your class attendance so that you know if you are on the right track. If you need to make some changes, there are resources available such as the Center for Academic Resources in the Student Success Center. You are also encouraged to visit the course or lab instructor during their office hours. The Early Alert grades are not permanent and will not appear on your transcript.

**Special Accommodations:** Reasonable accommodations will be made for students with disabilities. Please contact Disability Services (424-3100 (voice) or 424-1319 (TTY)) or visit their web site at <http://www.uwosh.edu/dean/disabilities.htm> for the University’s accommodation request form and documentation requirements. Information related to an individual’s accommodation request will be kept confidential.

**Academic Integrity:** The University of Wisconsin Oshkosh is committed to a standard of academic integrity of all students. The system guidelines state: “Students are responsible for the honest completion and representation of their work, for the appropriate citation of sources, and for respect of others’ academic endeavors. Students are subject to disciplinary action of academic misconduct which is defined in the UWS 14.03 Wisconsin Administrative code. Students are encouraged to review the code, located on the “Dean of Students” web page (see Student Conduct) in order to understand your rights and responsibilities.

### TENTATIVE SCHEDULE

Day	Topic	Reading	Lab subject
Sept. 4	Introduction, Physical Geography	1-15	No Lab the first week of class
Sept. 6	Location, solar energy	16-32, 42-46	
Sept. 9	Seasons, atmospheric composition	46-60	Lab 1 Latitude...
Sept. 11	Atmospheric composition	51-60	
Sept. 13	Earth’s surface energy balance	76-88	
Sept. 16	Earth’s surface energy balance	76-88	Lab 2 Solar Energy...
Sept. 18	Temperature scales	88-99	
Sept. 20	Temperature	88-99	
Sept. 23	Atmospheric pollution	60-67	Lab 3 Temperature Patterns
Sept. 25	Urban environment	99-104	

Sept. 27	Climate effects on the human body	99-104	
Sept. 30	<b>EXAM 1</b>		Lab 4 Atmospheric Moisture
Oct. 2	Unique properties of water/Humidity	146-152	
Oct. 4	Adiabatic processes	153-154	
Oct. 7	Adiabatic processes	153-154	<b>LAB EXAM 1</b>
Oct. 9	Atmospheric stability	154-156	
Oct. 11	Atmospheric lifting mechanisms	162-166	
Oct. 14	Precipitation and clouds	156-160	Lab 5 Atmospheric Stability...
Oct. 16	Air pressure and winds	116-120	
Oct. 18	Global circulation patterns	120-127	
Oct. 21	Global circulation patterns	120-127	Lab 5a Global circulation
Oct. 23	Air masses	290-294	
Oct. 25	PDO, NAO	137-138	
Oct. 28	Putting it all together		Lab 6 Weather Maps..
Oct. 30	<b>EXAM 2</b>		
Nov. 1	Cyclogenesis	167-169, 312-315	
Nov. 4	Cyclogenesis	318-329	Lab 7 Weather forecasting
Nov. 6	Tornadoes	170-175	
Nov. 8	Tornadoes	170-175	
Nov. 11	Hurricanes	340-364	Lab 8 Tornados
Nov. 13	Hurricanes	340-364	
Nov. 15	Climate classification	226-249	
Nov. 18	Vegetation and Climate	192-201, 268-284	
Nov. 20	Vegetation and Climate	268-284	Lab 9 Soil water... Lab 10 Climate classification
Nov. 22	Droughts	192-201	
Nov. 25	ENSO, Ocean currents	135-137	
Nov. 27-29	<i>Thanksgiving Holidays</i>		<b><i>NO labs the week of Thanksgiving</i></b>
Dec. 2	Climate change	250-258	<b>LAB EXAM 2</b>
Dec.4	Climate change	250-258	
Dec.6	Climate change	250-258	
Dec. 9	Climate change	250-258	No lab the last week of class. Reflections for USP students due in e-portfolios
Dec.11	<b>EXAM 3</b>		
Dec. 13	Wrap –up		

## For Students in the University Studies Program (USP)

As a component of the USP each of you has an e-portfolio that will track your educational growth at UW Oshkosh. Each USP Quest or Explore course has a key assignment and at least 1 reflection question that should be placed in your e-portfolio. At the end of your USP courses you will use the e-portfolio documents to complete a core assignment in your Connect course. Think of the e-portfolio as a diary of your learning and growth during your USP courses. And just like a personal diary it will be private (at least to me). In this course we are Exploring Nature, specifically the climate system, with a focus on the Signature Question of Sustainability. A key learning outcome of this course is to better understand the processes that control local and global climate. Knowledge of climate is a foundation for understanding ecosystems and critical for understanding what the environment of the next century will be like. Your key assignment to be uploaded to your e-portfolio is Lab 5a Global Circulations from the Week of October 21. Your reflection question, which should be submitted into your e-portfolio by December 9 is:

“How has your understanding of climate changed?”

I suggest that you put effort into your reflection answer. You will need it in a few semesters.