

Geog211 – WS1 Meteorology Winter Session 2023

**Southern Illinois University Edwardsville
Department of Geography**

Syllabus

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| Course number and name: | Geog211 – WS1 Meteorology |
| Number of Credits: | 3 hours |
| Time of Class: | Dec. 19, 2022 – Jan. 8, 2023 |
| Room and Location of Class: | Online Asynchronous |
| Instructor's Name: | Shunfu Hu, Professor |
| Instructor's Office Location: | Online |
| Instructor's Virtual Office Hours | Dr. Hu will have access to e-mails so please send inquiries to Dr. Hu via e-mails. |
| Instructor's Contact Information: | E-mail: shu@siue.edu I will respond to your e-mail within 24 hours (except weekends and holidays). |
| | Course web site address: http://bb.siue.edu (<i>log in with your SIUE E-mail account user name and password</i>) |
| Prerequisites: | Student needs to be knowledgeable about how to use Blackboard |

Course Description

This course is an introduction to the current and comprehensive information about the atmosphere—its components, problems, and applications. Specifically, this course covers such topics as temperature, moisture and atmospheric stability, condensation and precipitation, air pressure and winds, circulation, air masses, weather patterns, thunderstorms and tornadoes, hurricanes, air pollution, and world climates. In addition, this course will address human health issues, such as storm related atmospheric hazards, including lightning, blizzards, hails, freezing rain, destructive winds, and flashing flooding as well as not-storm related atmospheric hazards, including UV, heat waves, cold waves, fogs, air pollutions, wildfires, and droughts.

Course Objective

The objective of the course is to introduce the student to various processes and environmental factors that determine weather and climate at various scales. Students will gain a basic understanding of the factors and processes responsible for:

- 1) The spatial distribution of heat energy on the earth's surface and within the atmosphere;
- 2) Air temperature, humidity, pressure, atmospheric and oceanic circulation;
- 3) Condensation, cloud, precipitation types and patterns;
- 4) Extreme weather hazards such as thunderstorms, tornadoes, and hurricanes;
- 5) Global climates and their distributions;
- 6) Global warming and climatic change; and
- 7) human health issues related to atmospheric hazards.

Textbooks and Materials

1. Required textbook: **The Atmosphere (14th edition) by Lutgens and Tarbuck**
2. A computer and Internet access will be needed for completing the course.
3. Blackboard training and access. SIUE-email account is required for the Blackboard access. Your Blackboard login is the same as your SIUE e-mail login. Please visit the site at <http://www.siue.edu/its/bb/index.shtml> immediately if you are not familiar with Blackboard.
4. Technical Help:
 - Frequently Asked Questions about Blackboard: Available at <http://www.siue.edu/its/bb/>
 - ITS help desk phone to reach Blackboard support – 650-5500
 - Blackboard support email itc_help@siue.edu

Attendance and Participation

Daily online participation of all course assignments is highly expected and required. Participation in online class discussions is an important part of the "learning experience." The quality of online class discussions influences the overall quality of the class. An individual's comments in class also give some indication of the student's assimilation and understanding of class content.

Instructional Methods

Since this is a three-week course, you will have to spend a fair amount of time studying every day in order to successfully complete this online course. Based on the features of online courses and research findings in this area, the **constructivist learning theory** is the major theoretical foundation of instructional methods used in this course. This theory focuses on learners' active learning, self-guidance, and possibly peer interaction. Specifically, a variety of online instructional methods will be involved in this course, including, but are not limited to the following:

1. **Individual chapter reading and comprehension.** It is absolutely your responsibility to read and comprehend the online structured chapter overview (e.g., chapter outlines, Powerpoint slides, pre-recorded lecture videos) on Blackboard and the specific chapter every day prior to completing all chapter assignments. It is expected that the structured chapter overview will help you better understand the chapters. In addition, YouTube videos, and current weather news articles and web links are provided to help you understand the concepts in each chapter.
2. **Individual online chapter testing.** In order to assess your mastery of the major concepts in each chapter, the chapter quizzes will be available on Blackboard. These are objective, open-book, and individual quizzes. If you have any questions, please e-mail them to me at shu@siue.edu. The maximum time for each quiz attempt is 45 minutes, with 3 attempts per quiz (Note: **the highest score will be recorded**). Your online quiz will be automatically graded. Online quizzes are all available during the entire winter session, December 19, 2022 through January 8, 2023. **The quizzes are all due at 11:59 p.m. on Jan 8th, 2023**, the last day of the winter session. It is possible that different students may get different formats of the test items because the test items will be randomized. It is reported that from 2-6 AM (<https://www.siue.edu/its/bb/maintenance.shtml>) the SIUE online system may be randomly under backup and maintenance. So please avoid taking quizzes during that period.
3. **Individual online exams.** There will be **four exams** during the entire session and they will be available on Blackboard. These are objective, open-book, and individual tests. But no peer discussion is allowed. If you have any questions, please e-mail them to the instructor at shu@siue.edu. The maximum time for each exam attempt is 100 minutes, with **only 1 attempt per exam**. Your online exams will be automatically graded. In order to avoid cheating, your exam results will not be released until the availability period has ended for each exam. **The first three exams will be available on their scheduled dates, respectively. The last exam will be available after Jan. 6th, 2022.** It is possible that different students may get different formats of the test items because the test items will be randomized. It is reported that from 2-6 AM (<https://www.siue.edu/its/bb/maintenance.shtml>) the SIUE online system may be randomly under backup and maintenance. So please avoid taking quizzes during that period.

If you have any chapter-related questions, please post them on the discussion board. In addition, each student is strongly encouraged to answer any posted questions there.

4. **E-mail communication.** If you have any other *non-content* related questions, please e-mail the instructor at shu@siue.edu
5. Online chat (Blackboard) with the class and/or your group members.
6. Zoom meeting if needed.
7. Additional announcements will be posted on Blackboard if needed.
8. Most of the time, the instructor will monitor and observe your group discussions on Blackboard although you will not see his posting and responses sometimes.

Course Requirements

1. **Individual online chapter quizzes.** Students will take online quiz for each chapter (20 questions in multiple-choice format). There are 15 chapters.
Total points = 300
2. **Individual online testing.** Students will take **four** online tests (50 questions in multiple-choice format; 2 points each question). Total points = 400
3. **Academic honesty is highly expected.** Plagiarism and cheating are serious offenses and may be punished by failure on assignments, tests, or projects.

Evaluation and Grading Policy

General criteria for the following grading components are described below:

1. Grade Type: Letter Grade (A–F): Specifically, final grades will be assigned based on the performances of **all work** described below. The specific grading standards are:
A=90-100%, B=80-89%, C=70-79%, D= 60-69%, F=0-59%.
 2. Grade Components:
 - a. Online chapter quizzes (15 quizzes)300 points
 - b. Online tests (4 tests)400 points
- Total700 points**

Class Schedule and Reading Assignments

| Date | Topics | Readings |
|---------|--|--------------|
| Dec. 19 | Introduction to the course Chapter 1: The Earth's Atmosphere | P. 10 – 27 |
| Dec. 20 | Chapter 2: Earth's seasons; Energy; Radiation Laws | P. 30 – 52 |
| Dec. 21 | Chapter 3: Temperature; Temperature Control; Applications of Temperature | P. 60 – 84 |
| Dec. 22 | Exam I (covers Chapters 1 through 3) | |
| Dec. 23 | Chapter 4: Water in the Atmosphere; Atmospheric Stability | P. 90 – 116 |
| Dec. 24 | Chapter 5: Condensation; Precipitation Processes | P. 124 – 151 |
| Dec. 25 | Merry Christmas! | |
| Dec. 26 | Exam II (covers Chapters 4 and 5) | |
| Dec. 27 | Chapter 6: Atmospheric Pressure; Surface Winds; Wind Aloft | P. 158 – 180 |
| Dec. 28 | Chapter 7: Scales of Atmospheric Circulations; El Nino & La Nina | P. 185 – 208 |
| Dec. 29 | Chapter 8: Air Masses | P. 217 – 230 |
| Dec. 30 | Chapter 9: Front Theory; Mid-latitude Cyclones | P. 235 – 261 |
| Dec. 31 | Exam III (covers Chapters 6 through 9) | |
| Jan. 1 | Happy New Year! | |
| Jan. 2 | Chapter 10: Thunderstorms and Tornadoes | P. 267 – 294 |
| Jan. 3 | Chapter 11: Hurricanes | P. 299 – 318 |
| Jan. 4 | Chapter 12: Weather forecasting | P. 323 – 353 |
| Jan. 5 | Chapter 13: Air Pollution | P. 359 – 377 |
| Jan. 6 | Chapter 14: Changing climate | P. 381 – 406 |
| Jan. 7 | Chapter 15: Global climate | P. 411 – 441 |
| Jan. 8 | Exam IV (covers Chapters 10 through 15) | |

Note 1: Online quizzes are all available during the entire winter session, December 19, 2022 through January 8, 2023. The first three exams will be available on their scheduled dates, respectively. The last exam will be available after Jan. 6, 2023.

Note 2: All online quizzes and exams are due at 11:59 p.m., Sunday, January 8th, 2023, the last day of the winter session.

Note 3: There are 15 chapters in total. It is strongly recommended that you complete the tasks for one chapter every day, including reading the chapter outline, going over the Powerpoint slides (PPT), and completing the online quiz.

Other things you need to know about this course.

1. Disability support

I will do my best to make sure that all students have the resources needed to succeed in this class. If there are aspects of the instruction or design of this course that result in barriers to your inclusion or to accurate assessment of achievement—such as time-limited exams, inaccessible web content, or the use of non-captioned videos—please notify the instructor as soon as possible. Students are also encouraged to contact office for Accessible Campus Community and Equitable Student Support (ACCESS). The ACCESS office is located in the Student Success Center, Room 1270. You can also reach the office by e-mail at myaccess@siue.edu or by calling 618-650-3726. For more information on policies, procedures, or necessary forms, please visit the ACCESS website at www.siue.edu/access.

2. Diversity and Inclusion

SIUE is committed to respecting everyone's dignity at all times. In order to learn, exchange ideas, and support one another, our virtual and physical classrooms must be places where students and teachers feel safe and supported. Systems of oppression permeate our institutions and our classrooms. All students and faculty have the responsibility to co-create a classroom that affirms inclusion, equity, and social justice, where racism, sexism, classism, ableism, heterosexism, xenophobia, and other social pathologies are not tolerated. Violations of this policy will be enforced in line with the SIUE Student Conduct Code.

The Hub <https://www.siue.edu/csdi> is an excellent resource for students for support and community. Any person who believes they have experienced or witnessed discrimination or harassment can contact Ms. Jamie Ball, Director in the Office of Equal Opportunity, Access and Title IX Coordination at (618) 650-2333 or jball@siue.edu. There is also an online form for reporting bias incidents at https://cm.maxient.com/reportingform.php?SIUEdwardsville&layout_id=10.

3. Email

You are encouraged to use email to contact me (shu@siue.edu). Please include a relevant subject line (I delete all email without a subject line.), the course name and section, and your name.

4. Blackboard

The syllabus, course outline, announcements, lecture notes, reading assignments, grades and other information related to the class will be available on Blackboard. Be sure to check it frequently.

5. Withdrawal

Be sure you know SIUE's withdrawal policies and deadlines.

6. Disclosure of grades

In accordance with the Family Education Privacy Act, I cannot disclose grades in a manner that would compromise confidentiality. Therefore, I cannot disclose grades by telephone, email or through public posting. You will be able to check

your grades on Blackboard. If you wish to discuss your grade, please see me during office hours or make an appointment.

7. Grades of Incomplete

Grades of Incomplete are only given for major family or medical emergencies (Documentation is required). Be sure you understand SIUE's policy on incompletes before you contact me.

8. Academic honesty and plagiarism

Students are expected to behave with honesty and integrity at all times. Cheating is an act of academic misconduct for which students are subject to sanctions. For more information on SIUE's policy on cheating, see the appropriate sections of the SIUE Student Code of Conduct. <http://www.siue.edu/POLICIES/3c2.html>

The University recognizes plagiarism as a serious academic offense. Plagiarism, the act of representing the work of another as one's own, may take two forms. It may consist of copying, paraphrasing or otherwise using the written or oral work of another without acknowledging the source or it may consist of presenting oral or written course work prepared by another as one's own. For more information on SIUE's policy on plagiarism, see the appropriate sections of the SIUE Student Code of Conduct. <http://www.siue.edu/POLICIES/1i6.html>

Students found to have cheated or plagiarized material will receive an F in this course. Additional disciplinary actions may be taken as warranted.

9. Disruption of class and uncivil behavior

Students who disrupt the functioning of the class or behave in an uncivil manner to the instructor or to other students will be asked to leave the class. For more information on how class disruption and uncivil behavior are handled at SIUE, see the Student Code of Conduct. <http://www.siue.edu/POLICIES/3c1.html>

10. An important "However"

This syllabus, the course outline, and all course policies are subject to modification by the instructor as conditions warrant.