Term Information

Effective Term	Autumn 2025
Previous Value	*Autumn 2013*

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

Add a distance learning course version for the current course of GEOG 5900.

Retain an in-person enrollment version of the course with all attributes and curricular function.

What is the rationale for the proposed change(s)?

Provide added flexibility for student enrollment and departmental offering and faculty allocation. Content amicable for distance learning mode of instruction with syllabus revision attached.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

None.

Is approval of the requrest contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area	Geography
Fiscal Unit/Academic Org	Geography - D0733
College/Academic Group	Arts and Sciences
Level/Career	Graduate, Undergraduate
Course Number/Catalog	5900
Course Title	Weather, Climate, and Global Warming
Transcript Abbreviation	Climatology
Course Description	An introduction to the fundamental physical and mathematical principles governing both day-to-day weather and the average of weather, or climate. Objectives are to understand the physical processes of the earth-atmosphere system, describe its weather features and climate characteristics today, and outline how they might change in the future as a result of global warming.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 12 Week
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	100% at a distance
Previous Value	*No*
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No

Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites	
Exclusions	Not open to students with credit for AtmosSc 2940
Previous Value	Not open to students with credit for 520 or AtmosSc 2940 (230).
Electronically Enforced	No

Cross-Listings

Cross-Listings

Subject/CIP Code

Subject/CIP Code	40.0401
Subsidy Level	Doctoral Course
Intended Rank	Junior, Senior, Masters, Doctoral

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors
The course is an elective (for this or other units) or is a service course for other units

Previous Value

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Describe the composition of the atmosphere, explain the factors that cause variations in solar radiation and the surface energy budget over time and space; learn physical processes in formation of atmospheric features, explain environmental issues.

Previous Value

Content Topic List

- Climatology
- The elements and the controls of climate
- Types of climate and their distribution
- Climates and their effects on the economic and other activities of humans

Sought Concurrence No

Attachments

- GEOG5900_syllabus_fall2025_DL_Nov6.pdf: GEOG 5900 DL_ New Syllabus for Distance Education

  (Syllabus. Owner: Godfrey,Ryan B)

- GEOG5900_syllabus_fall2024_Sep4.pdf: GEOG 5900_ In-Person Syllabus Original

  (Syllabus. Owner: Godfrey,Ryan B)

- Quiring_ASC-distance-approval-cover-sheet-GEOG5900.pdf: ASC Distance Education Cover Sheet_Approved

  (Cover Letter. Owner: Godfrey,Ryan B)

- ASC Distance Education Review Approval Email.pdf: Approval Email from ASC DE Coordinator

  (Other Supporting Documentation. Owner: Godfrey,Ryan B)

- Curriculum Map_ATMOSSC BS_ 10.30.2024.pdf: Major Curriculum Map_ASP

  (Other Supporting Documentation. Owner: Godfrey,Ryan B)

Comments

- Course change submission to establish a distance learning iteration of the current course. No change to course role in curriculum or course offering structure for department and ASP major. ASC DE coversheet and Coordinator attached. Recommendations from ASC DE Coordinator are reflected in the DL syllabus attached. *(by Godfrey,Ryan B on 11/07/2024 03:47 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Godfrey,Ryan B	11/07/2024 03:47 PM	Submitted for Approval
Approved	Coleman,Mathew Charles	11/08/2024 08:29 AM	Unit Approval
Approved	Vankeerbergen,Bernadette Chantal	11/12/2024 06:31 PM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Hilty,Michael Neff,Jennifer Vankeerbergen,Bernadette Chantal Steele,Rachel Lea	11/12/2024 06:31 PM	ASCCAO Approval

GEOGRAPHY 5900: WEATHER, CLIMATE AND GLOBAL WARMING

Autumn 2025. 3 Units.
Last updated November 6, 2024

Instructor: Dr. Steven Quiring
Office: 1124 Derby Hall
Telephone: 614-247-8222
Email: quiring.10@osu.edu *(preferred contact method)*

Office Hours: Dr. Quiring's office hours will be held Monday and Wednesday (2:00 to 3:00 pm) and by appointment. You can attend office hours virtually (using Zoom):
https://osu.zoom.us/j/91712777572?pwd=emNpVzhibWpKeDNYN21SVWpOaWFXUT09
Meeting ID: 917 1277 7572
Password: n5cJnT

If the above times do not work for you, please email me to setup a meeting at a time that works for you.

Teaching Assistant: TBD
Office hours: office hours will be Tuesday and Thursday (3 to 4 pm) and by appointment. You can attend office hours virtually (using Zoom):

Prerequisites

None.

Course description

This course serves as an introduction to the fundamental physical and mathematical principles governing both day-to-day weather and the average of weather, or climate, of a region. The objective is to **understand the physical processes of the earth-atmosphere system and describe its weather features and climate characteristics**. This includes the energy receipt, loss, and redistribution in the earth-atmosphere system as well as the role of atmospheric moisture, its global spatial distribution, and its importance in energy exchange, and cloud and precipitation formation.

Course lectures will describe the causes, and the spatial distribution, of climates of the world as well as the physical mechanisms of some observed weather phenomena. The physical causes of and spatial variations in small- and large-scale motions of the atmosphere will be

described. The distribution and causes of 21st century climate will be explained and the distributions of past climates, methods for reconstructing them, and the potential explanations for them will be discussed. The course will also consider how human activities have both intentionally and unintentionally become a factor in the physical processes of weather and climate. Weather and climate influences almost every aspect of our personal and professional activities. A goal of this class is to help students understand how the material covered in this class is related to their fields of interest and their daily lives.

Course learning outcomes

By the end of this course, students should successfully be able to:

(1) describe the structure and composition of the atmosphere and how it has changed with time;

(2) explain the factors that cause variations in solar radiation and the surface energy budget over time and space;

(3) explain the physical processes leading to the formation of atmospheric features including clouds, precipitation, winds, cyclones and thunderstorms;

(4) identify and explain environmental issues pertaining to human impacts on the climate system, including global warming;

(5) describe the spatial and temporal patterns of global temperature and precipitation, and the physical processes that are responsible for these patterns.

HOW THIS COURSE WORKS

Mode of delivery: This is a distance learning course. The lectures, reading quizzes, exercises and exams will be online. They can be completed on Carmen at a time that is convenient for the students (asynchronous).

Pace of online activities: This course is divided into **weekly modules** that are released one week ahead of time. You are expected to keep pace with weekly deadlines, but you may schedule your efforts freely within this time frame.

Communication: I will communicate regularly with students via Carmen class announcements and weekly emails. These communications will provide reminders of the topics for the week and upcoming deadlines.

weather discussion and Q & A forum in the Carmen discussion board, and finally that the instructor will also hold online review sessions where students can ask questions before each exam.

Credit hours and work expectations: This is a **3-credit-hour course**. According to Ohio State policy, students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of homework (reading and assignment preparation, for example) to receive a grade of (C) average.

Attendance and participation requirements: Because this is an online course, your attendance is based on your online activity and participation. The following is a summary of students' expected participation:

- **Participating in online activities**: **AT LEAST ONCE PER WEEK**
  You are expected to log in to the course in Carmen every week. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible.*
- **Office hours**: **OPTIONAL**
  My office hours and the TA office hours are optional. They are available for students who have questions about the course content and assignments (or you can just stop by if you want to say hi).
- **Question and Answer Forum**: **OPTIONAL**
  I will create a Q&A discussion forum on Carmen for students who have questions about the course content and assignments. This will be beneficial for students who can't attend office hours, or just have a quick question.
- **Weather discussion: OPTIONAL**
  Each week I will provide a summary of recent and upcoming weather events. For example, an overview of a hurricane that is forecast to make landfall in the United States or a mid-latitude cyclone that will bring rainfall to Ohio. Students are encouraged to ask questions and share their observations. These discussions will connect the course content to current weather conditions.
- **Participating in reading quizzes and exercises**: **UP TO 2 TIMES PER WEEK**
  A reading quiz will be assigned each week and an exercise will be assigned approximately every other week. These assignments have fixed due dates (See Carmen for all due dates).
- **Online review sessions**: **OPTIONAL**

  I will hold a live review session before each of the exams. During this session I will summarize the format and content that will be on the exam. I will also provide students with the opportunity to ask questions about the exam content. These sessions will be recorded for those who are unable to attend.

COURSE MATERIALS AND TECHNOLOGIES

Textbook

REQUIRED

- Understanding Weather and Climate, 7th Edition (2015), Aguado & Burt, ISBN-13: 9780134113388, Pearson.
- *Note:* You can use an earlier edition of the textbook to save money, but it is **your responsibility** to resolve any discrepancy between different editions. Material will be assigned based upon the 7th edition of the textbook.

Course technology

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** ocio.osu.edu/help
- **Phone:** 614-688-4357(HELP)
- **Email:** servicedesk@osu.edu
- **TDD:** 614-688-8743

BASELINE TECHNICAL SKILLS FOR ONLINE COURSES

- Basic computer and web-browsing skills
- Navigating Carmen: for questions about specific functionality, see the Canvas Student Guide.

REQUIRED TECHNOLOGY SKILLS SPECIFIC TO THIS COURSE

- CarmenZoom virtual meetings
- Completing online quizzes and exams in Carmen. For questions about specific functionality, see the Canvas Student Guide.

REQUIRED EQUIPMENT

- Computer: current Mac (MacOs) or PC (Windows 10) with high-speed internet connection

- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone
- Other: a mobile device (smartphone or tablet) to use for BuckeyePass authentication

REQUIRED SOFTWARE

- Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Full instructions for downloading and installation can be found at go.osu.edu/office365help.

CARMEN ACCESS

You will need to use BuckeyePass multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device help article for step-by-step instructions (go.osu.edu/add-device).
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the Duo Mobile application (go.osu.edu/install-duo) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357(HELP) and IT support staff will work out a solution with you.

GRADING AND FACULTY RESPONSE

How your grade is calculated

Your grade will be based on three parts:

Reading Quizzes (best 12 will count)	15%
Exercises (best 7 will count)	25%
Exams (3; each worth 20%)	60%

See course schedule below for due dates.

Reading Quizzes. There is a reading quiz that is due at the beginning of each week (due Monday at 11 pm). Each quiz will be administered through Carmen and it has ~10 questions

that are based on the chapter you were assigned to read. These quizzes are assigned to encourage you to keep up with reading the textbook. **There are no makeups for missed reading quizzes and late submissions are not accepted. Please refer to Carmen for due dates.** This is an individual assignment. There are 14 reading quizzes that will be assigned during the semester. You will get credit for the best 12 scores. Therefore, if you miss a reading quiz for any reason (you were ill, you forgot, you were away, etc.), a makeup will not be offered. This will be one of the lowest grades that will be dropped. This gives equal treatment to everyone in the class. No additional makeups/extensions/do overs will be provided.

Exercises. The exercises will require you to apply what you learn in this class. All exercises will be administered through Carmen. They are due at the end of the week (due Friday at 11 pm). These are individual assignments and each student must submit their own work. However, you may discuss the questions and work collaboratively. **There are no makeup exercises and late submissions are not accepted. Please refer to Carmen for due dates.** There are 8 exercises that will be assigned during the semester. You will get credit for the best 7 scores.

Exams. Examinations will be administered online through Carmen. All students will take the exams at the same time. This is an individual assignment. You are not allowed to discuss the questions with anyone. The exam is open book and open notes. Therefore, you can look at the textbook and your notes to answer the questions. The exams will be posted for a 24-hour period. They are timed and you will have 55 minutes to complete the exam. Once you answer a question, you will not have the ability to go back and change your response.

*You must be available on the date scheduled for these exams. I am letting you know at the start of the semester so that you can arrange your schedule accordingly. Barring extraordinary circumstances there will be no make-up exams. Written documentation will be required and verified before a make-up exam will be considered. Students must contact the instructor **prior** to any exam to be considered for a make-up exam.*

Grading scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70 –72.9: C-
67 –69.9: D+
60 –66.9: D
Below 60: E

Instructor feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

- **Grading and feedback:** Reading quizzes, exercises and exam grades will be released once everyone has completed the assignment. This will typically be within 7 days.
- **Email:** The TA and I will do our best to reply to emails within 24 hours on days when class is in session at the university**.**

OTHER COURSE POLICIES

Academic integrity policy for this class

- **Reading Quizzes:** This is an individual assignment. There are no makeups for missed reading quizzes and late submissions are not accepted. Please refer to Carmen for due dates. There are 14 reading quizzes that will be assigned during the semester. You will get credit for the best 12 scores.
- **Exercises**: These are individual assignments and each student must submit their own exercise. However, you may discuss the questions and work collaboratively. **There are no makeup exercises and late submissions are not accepted. Please refer to Carmen for due dates.** There are 8 exercises that will be assigned during the semester. You will get credit for the best 7 scores.
- **Exams**: You must complete the 3 exams yourself, without any external help or communication. You are not allowed to discuss the questions with anyone. The exam is open book and open notes. Therefore, you can look at the textbook and your notes to answer the questions. **Please refer to Carmen for the exam dates.**

OHIO STATE'S ACADEMIC INTEGRITY POLICY

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages (COAM Home)
- *Ten Suggestions for Preserving Academic Integrity (Ten Suggestions)*
- *Eight Cardinal Rules of Academic Integrity* (www.northwestern.edu/uacc/8cards.htm)

Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Statement on Title IX

All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources.

If you or someone you know has been harassed or discriminated against based on your sex or gender, including sexual harassment, sexual assault, relationship violence, stalking, or sexual

exploitation, you may find information about your rights and options at titleix.osu.edu or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu. Title IX is part of the Office of Institutional Equity (OIE) at Ohio State, which responds to all bias-motivated incidents of harassment and discrimination, such as race, religion, national origin and disability. For more information on OIE, visit equity.osu.edu or email equity@osu.edu.

Your mental health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you find yourself feeling isolated, anxious or overwhelmed, please know that there are resources to help: ccs.osu.edu. You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org. The Ohio State Wellness app is also a great resource available at go.osu.edu/wellnessapp.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Requesting accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** slds@osu.edu; 614-292-3307; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- CarmenCanvas accessibility
- CarmenZoom accessibility

COURSE SCHEDULE

This course is divided into **weekly modules** that are released one week ahead of time. You are expected to keep pace with weekly deadlines, but you may schedule your efforts freely within this time frame. For convenience, I have divided into the class content and readings into 2-3 days per week. The due dates for the exercises and reading quizzes are shown below.

Date	Day	Class Content	Readings	Assignments	Week
Aug. 27	W	Syllabus and intro			1
Aug. 29	F	Introduction to climate change			1
Sep. 1	M		Chapter 16	Reading quiz 1	2
Sep. 3	W	Climate change: The Science	Chapter 16		2
Sep. 5	F	Climate change: Future Impacts	Chapter 16		2
Sep. 8	M		Chapter 1	Reading quiz 2	3
Sep. 10	W	Introduction to the atmosphere	Chapter 1		3
Sep. 12	F	Atmospheric structure	Chapter 1	Exercise #1	3
Sep. 15	M		Chapter 2	Reading quiz 3	4
Sep. 17	W	Solar radiation	Chapter 2		4
Sep. 19	F	Earth-Sun relationships and the seasons	Chapter 2	Exercise #2	4
Sep. 22	M		Chapter 3	Reading quiz 4	5
Sep. 24	W	Energy balance (part 1)	Chapter 3		5
Sep. 26	F	Energy balance (part 2)	Chapter 3	Exercise #3	5
Sep. 29	M	Controls on temperature	Chapter 3	Reading quiz 5	6
Oct. 1	W	**Exam #1 (all students will take exam online on Sept. 29)**			6
Oct. 3	F	Atmospheric humidity	Chapter 5		6
Oct. 6	M		Chapter 5	Reading quiz 6	7
Oct. 8	W	Controls on humidity	Chapter 5		7
Oct. 10	F	Condensation: Dew, fog, and clouds	Chapter 5	Exercise #4	7
Oct. 13	M		Chapter 6	Reading quiz 7	8
Oct. 15	W	Stability and clouds	Chapter 6		8
Oct. 17	F	**Fall Break**			8
Oct. 20	M		Chapter 7	Reading quiz 8	9
Oct. 22	W	Precipitation (part 1)	Chapter 7		9
Oct. 24	F	Precipitation (part 2)	Chapter 7	Exercise #5	9
Oct. 27	M		Chapter 4	Reading quiz 9	10
Oct. 29	W	Atmospheric pressure and winds	Chapter 4		10
Oct. 31	F	**Exam #2**			10

		(all students will take exam online on Oct. 31)			
Nov. 3	M		Chapter 8	Reading quiz 10	11
Nov. 5	W	Global systems (part 1)	Chapter 8		11
Nov. 7	F	Global systems (part 2)	Chapter 8		11
Nov. 10	M		Chapter 9	Reading quiz 11	12
Nov. 12	W	Air Masses & Fronts	Chapter 9		12
Nov. 14	F	Mid-latitude cyclones	Chapter 10	Exercise #6	12
Nov. 17	M		Chapter 12	Reading quiz 12	13
Nov. 19	W	Hurricanes/Tropical Cyclones (part 1)	Chapter 12		13
Nov. 21	F	Hurricanes/Tropical Cyclones (part 2)	Chapter 12	Exercise #7	13
Nov. 24	M	Thunderstorms	Chapter 11	Reading quiz 13	14
Nov. 26	W	**Thanksgiving**			14
Nov. 28	F	**Thanksgiving**			14
Dec. 1	M		Chapter 13	Reading quiz 14	15
Dec. 3	W	Tornadoes	Chapter 11		15
Dec. 5	F	Weather forecasting	Chapter 13	Exercise #7	15
Dec. 8	M	Review			16
Dec. 10	W	**Exam #3 (all students will take exam online on Dec. 10)**			16

GEOGRAPHY 5900: WEATHER, CLIMATE AND GLOBAL WARMING

Autumn 2024. 3 Units.
Last updated September 4, 2024

Instructor: Dr. Steven Quiring
Office: 1062 Derby Hall
Telephone: 614-247-8222
Email: quiring.10@osu.edu

Weekly Class Meetings: Monday**,** Wednesday, Friday (12:40-1:35 pm), Hitchcock Hall 035

Office Hours: Dr. Quiring's office hours will be held Monday and Wednesday (1:30 to 2:30 pm) and by appointment. My office hours will be held in 1062 Derby Hall.

If the above times do not work for you, please email me to setup a meeting at a time that works for you.

Teaching Assistants: Jessica Zhang (zhang.12122@buckeyemail.osu.edu) & Gavin White (white.3775@buckeyemail.osu.edu)

Office Hours: Jessica's office hours will be Tuesday, 2:30 pm to 4:30 pm. Jessica's office hours will be in 0100 Derby Hall.

Gavin's office hours will be Thursday, 9:30 am to 11:30 am. Gavin's office hours will be in 0100 Derby Hall.

Course description

This course serves as an introduction to the fundamental physical principles governing both day-to-day weather and climate of a region. The objective is to **understand the physical processes of the earth-atmosphere system and describe its weather features and climate characteristics**. This includes the energy receipt, loss, and redistribution in the earth-atmosphere system as well as the role of atmospheric moisture, its global spatial distribution, and its importance in energy exchange, and cloud and precipitation formation.

Course lectures will describe the causes, and the spatial distribution, of climates of the world as well as the physical mechanisms of weather phenomena. The physical causes of and spatial variations in small- and large-scale motions of the atmosphere will be described. The distribution and causes of 21st century climate will be explained and the distributions of past

climates, methods for reconstructing them, and the potential explanations for them will be discussed. The course will also consider how human activities have both intentionally and unintentionally become a factor in the physical processes of weather and climate. Weather and climate influences almost every aspect of our personal and professional activities. A goal of this class is to help students understand how the material covered in this class is related to their fields of interest and their daily lives.

Course learning outcomes

By the end of this course, students should successfully be able to:

(1) describe the structure and composition of the atmosphere and how it has changed with time [Goal A; 1a];

(2) explain the factors that cause variations in solar radiation and the surface energy budget over time and space [Goal A; 1c];

(3) explain the physical processes leading to the formation of atmospheric features including clouds, precipitation, winds, cyclones and thunderstorms [Goal A; 1c];

(4) identify and explain environmental issues pertaining to human impacts on the climate system, including global warming [Goal D; 1a and 1b];

(5) describe the spatial and temporal patterns of global temperature and precipitation [Goal A; 3a], and the physical processes that are responsible for these patterns [Goal A; 3d].

HOW THIS COURSE WORKS

Mode of delivery: This is an in-person class. All of the lectures and exams will be given in person. The reading quizzes and exercises will be complete online through Carmen at a time that is convenient for the students (asynchronous).

You are expected to attend class. We will be meeting each week on Monday, Wednesday, and Friday (12:40-1:35 pm, Hitchcock Hall 035). Class activities will include quizzes, discussions, and activities that are related to the course content. They are designed to help students learn and apply course concepts. These activities **count** towards your grade.

Pace of online activities: This course is divided into **weekly modules** that are released one week ahead of time. You are expected to keep pace with weekly deadlines, but you may schedule your efforts freely within this time frame.

Credit hours and work expectations: This is a **3-credit-hour course**. According to Ohio State policy, students should expect around 3 hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to 6 hours of

homework (reading and assignment preparation, for example) to receive a grade of (C) average.

Attendance and participation requirements: You are expected to attend in-person classes and complete online activities. The following is a summary of everyone's expected participation:

- **Participating in online activities**: **AT LEAST ONCE PER WEEK**
  You are expected to log in to the course in Carmen every week. During most weeks you will probably log in many times. If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible.*
- **Participating in classroom activities: THREE TIMES PER WEEK**
  You are expected to attend class in-person every Monday, Wednesday, and Friday. This class will include graded quizzes that can only be completed in person.
- **Office hours**: **OPTIONAL**
  My office hours and the TA office hours are optional. They are available for students who have questions about the course content and assignments (or you can just stop by if you want to say hi).
- **Participating in reading quizzes and exercises**: **UP TO 2 TIMES PER WEEK**
  A reading quiz will be assigned each week and an exercise will be assigned approximately every other week. These assignments have fixed due dates (See Carmen for all due dates).

COURSE MATERIALS AND TECHNOLOGIES

Textbook

REQUIRED

- Understanding Weather and Climate, 7th Edition (2015), Aguado & Burt, ISBN-13: 9780134113388, Pearson.
- *Note:* You can use an earlier edition of the textbook to save money, but it is **your responsibility** to resolve any discrepancy between different editions. Material will be assigned based upon the 7th edition of the textbook.

Course technology

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at ocio.osu.edu/help/hours, and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** ocio.osu.edu/help
- **Phone:** 614-688-4357(HELP)
- **Email:** servicedesk@osu.edu
- **TDD:** 614-688-8743

BASELINE TECHNICAL SKILLS FOR ONLINE COURSES

- Basic computer and web-browsing skills
- Navigating Carmen: for questions about specific functionality, see the Canvas Student Guide.

REQUIRED TECHNOLOGY SKILLS SPECIFIC TO THIS COURSE

- Completing online reading quizzes and exercises in Carmen. For questions about specific functionality, see the Canvas Student Guide.

REQUIRED EQUIPMENT

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone
- Other: a mobile device (smartphone or tablet) or landline to use for BuckeyePass authentication

CARMEN ACCESS

You will need to use BuckeyePass multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the BuckeyePass - Adding a Device help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click **Enter a Passcode** and then click the **Text me new codes** button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the Duo Mobile application to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and IT support staff will work out a solution with you.

GRADING AND FACULTY RESPONSE

How your grade is calculated

Your grade will be based on four parts:

Reading Quizzes (best 12 will count)	10%
In-class Quizzes	10%
Exercises (best 7 will count)	20%
Exams (3; each worth 20%)	60%

See course schedule below for due dates.

Reading Quizzes. There is a reading quiz that is due at the beginning of each week (due Monday at 11 pm). Each quiz will be administered through Carmen and it has ~10 questions that are based on the chapter you were assigned to read. These quizzes are assigned to encourage you to keep up with reading the textbook. **There are no makeups for missed reading quizzes and late submissions are not accepted. Please refer to Carmen for due dates.** This is an individual assignment. There are 14 reading quizzes that will be assigned during the semester. You will get credit for the best 12 scores. Therefore, if you miss a reading quiz for any reason (you were ill, you forgot, you were away, etc.), a makeup will not be offered. This will be one of the lowest grades that will be dropped. This gives equal treatment to everyone in the class. No additional makeups/extensions/do overs will be provided.

In-class Quizzes. There will be a number of in-class quizzes and activities that are worth a total of 10%. They are designed to reward those who attend class, so the dates of these in-class activities will not be announced. These activities may require you to work with your classmates to solve problems related to the theories covered in class. **There are no makeups for missed in-class quizzes.**

Exercises. The exercises will require you to apply what you learn in this class. All exercises will be administered through Carmen. They are due at the end of the week (due Friday at 11 pm). These are individual assignments and each student must submit their own work. However, you may discuss the questions and work collaboratively. **There are no makeup exercises and late submissions are not accepted. Please refer to Carmen for due dates.** There are 8 exercises that will be assigned during the semester. You will get credit for the best 7 scores.

Exams. Examinations will be administered in the classroom. All students will take the exams at the same time. This is an individual assignment. The exams have been scheduled during our normal class time.

- **Exam 1** (Friday, September 27, 12:40-1:35 pm ET) will test all topics covered since the start of the semester.
- **Exam 2** (Friday, October 25, 12:40-1:35 pm ET) will test all topics since Exam 1.
- **Exam 3** (Thursday, December 12, 2:00-3:45 pm ET) will test all topics since Exam 2.

*You must be available on the date and time scheduled for these exams. They are being held during the regular class time of this class, so you should not have any conflicts. I am letting you know at the start of the semester so that you can arrange your schedule accordingly. Barring extraordinary circumstances there will be no make-up exams. Written documentation will be required and verified before a make-up exam will be considered. Students must contact the instructor **prior** to any exam to be considered for a make-up exam.*

Grading scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70 –72.9: C-
67 –69.9: D+
60 –66.9: D
Below 60: E

Instructor feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

- **Grading and feedback:** Reading quizzes, exercises and exam grades will be released once everyone has completed the assignment. This will typically be within 7 days.
- **Email:** The TA and I will do our best to reply to emails within 24 hours on days when class is in session at the university**.**

OTHER COURSE POLICIES

Academic integrity policy for this class

- **Reading Quizzes:** This is an individual assignment. There are no makeups for missed reading quizzes and late submissions are not accepted. Please refer to Carmen for due dates. There are 14 reading quizzes that will be assigned during the semester. You will get credit for the best 12 scores.

- **Exercises**: These are individual assignments and each student must submit their own exercise. However, you may discuss the questions and work collaboratively. **There are no makeup exercises and late submissions are not accepted. Please refer to Carmen for due dates.** There are 8 exercises that will be assigned during the semester. You will get credit for the best 7 scores.
- **In-class Quizzes:** These are a mix of group/collaborative and individual assignments. Only those with documented university excused absences will be able to makeup in-class quizzes. There is approximately 1 per week during the semester. All of them count towards your final grade.
- **Exams**: You must complete the 3 exams yourself, without any external help or communication.

OHIO STATE'S ACADEMIC INTEGRITY POLICY

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct. If COAM determines that you have violated the university's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- The Committee on Academic Misconduct web pages (COAM Home)
- *Ten Suggestions for Preserving Academic Integrity (Ten Suggestions)*
- *Eight Cardinal Rules of Academic Integrity* (www.northwestern.edu/uacc/8cards.htm)

Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Statement on Title IX

All students and employees at Ohio State have the right to work and learn in an environment free from harassment and discrimination based on sex or gender, and the university can arrange interim measures, provide support resources, and explain investigation options, including referral to confidential resources.

If you or someone you know has been harassed or discriminated against based on your sex or gender, including sexual harassment, sexual assault, relationship violence, stalking, or sexual exploitation, you may find information about your rights and options at titleix.osu.edu or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu. Title IX is part of the Office of Institutional Equity (OIE) at Ohio State, which responds to all bias-motivated incidents of harassment and discrimination, such as race, religion, national origin and disability. For more information on OIE, visit equity.osu.edu or email equity@osu.edu.

Your mental health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you find yourself feeling isolated, anxious or overwhelmed, please know that there are resources to help: ccs.osu.edu. You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org. The Ohio State Wellness app is also a great resource available at go.osu.edu/wellnessapp.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Requesting accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. **SLDS contact information:** slds@osu.edu; 614-292-3307; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- CarmenCanvas accessibility
- CarmenZoom accessibility

COURSE SCHEDULE

Date	Day	Class Content	Readings	Exercises	Week
Aug. 21	W	Syllabus and intro	Syllabus		1
Aug. 23	F	Introduction to climate change			1
Aug. 26	M	Climate change (The Science)	Chapter 16	Reading quiz 1	2
Aug. 28	W	Climate change (Future Impacts)	Chapter 16		2
Aug. 30	F	Climate change (Future Impacts)	Chapter 16		2
Sep. 2	M	**NO CLASS- Labor Day**	Chapter 1	Reading quiz 2	3
Sep. 4	W	Introduction to the atmosphere	Chapter 1		3
Sep. 6	F	Atmospheric structure	Chapter 1	Exercise #1	3
Sep. 9	M	Solar radiation	Chapter 2	Reading quiz 3	4
Sep. 11	W	Solar radiation	Chapter 2		4
Sep. 13	F	Earth-Sun relationships and the seasons	Chapter 2	Exercise #2	4
Sep. 16	M	Energy balance	Chapter 3	Reading quiz 4	5
Sep. 18	W	Energy balance	Chapter 3		5
Sep. 20	F	Energy balance	Chapter 3	Exercise #3	5
Sep. 23	M	Controls on temperature	Chapter 3	Reading quiz 5	6
Sep. 25	W	Controls on temperature	Chapter 3		6
Sep. 27	F	**Exam #1**			6
Sep. 30	M	Controls on humidity	Chapter 5	Reading quiz 6	7
Oct. 2	W	Condensation: Dew, fog, and clouds	Chapter 5		7
Oct. 4	F	Dew, fog, and clouds (continued)	Chapter 5	Exercise #4	7
Oct. 7	M	Stability and clouds	Chapter 6	Reading quiz 7	8
Oct. 9	W	Stability and clouds	Chapter 6		8
Oct. 11	F	**NO CLASS- FALL BREAK**			8
Oct. 14	M	Precipitation	Chapter 7	Reading quiz 8	9
Oct. 16	W	Precipitation	Chapter 7		9
Oct. 18	F	Precipitation	Chapter 7	Exercise #5	9
Oct. 21	M	Atmospheric pressure and winds	Chapter 4	Reading quiz 9	10
Oct. 23	W	Atmospheric pressure and winds	Chapter 4		10
Oct. 25	F	**Exam #2**			10
Oct. 28	M	Global systems	Chapter 8	Reading quiz 10	11
Oct. 30	W	Global systems	Chapter 8		11
Nov. 1	F	Global systems	Chapter 8		11
Nov. 4	M	Air Masses & Fronts	Chapter 9	Reading quiz 11	12

Nov. 6	W	Air Masses & Fronts	Chapter 9		12
Nov. 8	F	Mid-latitude cyclones	Chapter 10	Exercise #6	12
Nov. 11	M	**NO CLASS- Veteran's Day**	Chapter 12	Reading quiz 12	13
Nov. 13	W	Hurricanes/Tropical Cyclones	Chapter 12		13
Nov. 15	F	Hurricanes/Tropical Cyclones	Chapter 12	Exercise #7	13
Nov. 18	M	Thunderstorms	Chapter 11	Reading quiz 13	14
Nov. 20	W	Thunderstorms & Tornadoes	Chapter 11		14
Nov. 22	F	Tornadoes	Chapter 11	Exercise #8	14
Nov. 25	M	Weather forecasting	Chapter 13	Reading quiz 14	15
Nov. 27	W	**NO CLASS- Thanksgiving**			15
Nov. 29	F	**NO CLASS- Thanksgiving**			15
Dec. 2	M	Weather forecasting	Chapter 13		16
Dec. 4	W	Review			16
Dec. 12	TR	**Exam #3 (2 pm to 345 pm in Hitchcock 035)**			16

From: Mick, Robert
To: Godfrey, Ryan
Cc: Quiring, Steven; Houser, Jana; Coleman, Mat
Subject: RE: ASC Distance Education Review Request - GEOG 5900
Date: Monday, November 4, 2024 2:45:06 PM
Attachments: image001.png
Quiring_ASC-distance-approval-cover-sheet-GEOG5900.pdf

Hello Ryan,

I have completed and signed off on the preliminary distance learning review for the GEOG 5900 course approval proposal. The syllabus provides a clear and transparent overview of the course expectations. I have included my feedback that includes just one suggested recommendation in the attached DL Cover Sheets. The instructor and the department have the option to revise the syllabus in response to the feedback before submitting to the ASCC faculty review committee.

The ASC Office of Distance Education strives to be a valuable resource to instructors and departments in the College of Arts and Sciences. In addition to managing the DL course review process, hosting ASC Teaching Forums, and developing an ever-expanding catalog of instructor support resources, we also provide one-on-one instructional design consultation to ASC instructors interested in redesigning any aspect of their online course. If your department or any of your individual instructors wish to meet with one of our instructional designers to discuss how we can provide advice, assistance, and support, please do let me know.

Please let me know if you have any questions.

Thank you,

Bob Mick
Distance Education Program Consultant
College of Arts and Sciences Office of Distance Education
The Ohio State University
009 Denney Hall, 164 Annie and John Glenn Ave.
Columbus, OH 43210
614-292-0393 Office
Mick.15@osu.edu

Follow us on X and join our conversation.

From: Godfrey, Ryan <godfrey.117@osu.edu>
Sent: Wednesday, October 30, 2024 2:29 PM
To: Mick, Robert <mick.15@osu.edu>
Cc: Quiring, Steven <quiring.10@osu.edu>; Houser, Jana <houser.262@osu.edu>; Coleman, Mat <coleman.373@osu.edu>
Subject: ASC Distance Education Review Request - GEOG 5900

Good afternoon, Robert –

Ryan Godfrey, Academic Planning Specialist for the Department of Geography here. Our faculty and Director of Undergraduate Studies are preparing to submit a distance education version of our current course, GEOG 5900: Climatology. Prior to ASC Curriculum Portal to faculty subcommittee submission, we are submitting the attached materials for initial review. We are still trying to submit for AU25 consideration with ASSC.

Please find the DE Cover Sheet, DE course syllabus, and current in-person syllabus attached for your consideration.

Please let us know if you have questions. Thank you for your review.

Best,

Ryan

THE OHIO STATE UNIVERSITY

Ryan B. Godfrey
Academic Planning Specialist

College of Arts and Sciences
Department of Geography
1049B Derby Hall
154 N Oval Mall, Columbus, OH 43210
614-292-7788 Office
godfrey.117@osu.edu / geography.osu.edu
Schedule an OnCourse Advsing Appointment
Pronouns: he/him/his

Distance Approval Cover Sheet

For Permanent DL/DH Approval | College of Arts and Sciences
(Updated 2-1-24)

Course Number and Title: GEOG 5900 Weather, Climate and Global Warming

Carmen Use

When building your course, we recommend using the ASC Distance Learning Course Template for CarmenCanvas. For more on use of Carmen: Common Sense Best Practices.

[X] A Carmen site will be created for the course, including a syllabus and gradebook at minimum.

If no, why not?

Syllabus

[X] Proposed syllabus uses the ASC distance learning syllabus template, includes boilerplate language where required, as well as a clear description of the technical and academic support services offered, and how learners can obtain them.

[X] Syllabus is consistent and is easy to understand from the student perspective.

[X] Syllabus includes a schedule with dates and/or a description of what constitutes the beginning and end of a week or module.

[ ] If there are required synchronous sessions, the syllabus clearly states when they will happen and how to access them.

Additional comments (optional).

No required synchronous sessions.

Instructor Presence

For more on instructor presence: About Online Instructor Presence.
For more on Regular and Substantive Interaction: Regular Substantive Interaction (RSI) Guidance

Students should have opportunities for regular and substantive academic interactions with the course instructor. Some ways to achieve this objective:

- [X] Instructor monitors and engages with student learning experiences on a regular and substantive cadence.

Explain your plan for understanding student experiences of the course and how the instructor will be responsive to those experiences (required).

Professor will hold Zoom office hours twice each week. Professor will utilize surveys and post-exam questionaires to monitor student experiences in the class.

- [X] Regular instructor communications with the class via announcements or weekly check-ins.
- [X] Instructional content, such as video, audio, or interactive lessons, that is visibly created or mediated by the instructor.
- [ ] Regular participation in class discussion, such as in Carmen discussions or synchronous sessions.
- [X] Regular opportunities for students to receive personal instructor feedback on assignments.

Please comment on this dimension of the proposed course (or select/explain methods above).

Professor will create all video content. Professor will communicate regularly with students via class announcements and weekly emails. Assignments will be graded and provide feedback to the students.

Delivery Well-Suited to DL/DH Environment

Technology questions adapted from the Quality Matters rubric. For information about Ohio State learning technologies: Toolsets.

- [X] The tools used in the course support the learning outcomes and competencies.
- [X] Course tools promote learner engagement and active learning.
- [X] Technologies required in the course have been vetted for accessibility, security, privacy and legality by the appropriate offices and are readily and reasonably obtainable.
- [X] Links are provided to privacy policies for all external tools required in the course.

Additional technology comments:

Which components of this course are planned for synchronous delivery and which for asynchronous delivery? (For DH, address what is planned for in-person meetings as well)

All components of this class, except office hours, are asynchronous.

If you believe further explanation would be helpful, please comment on how course activities have been adjusted for distance learning:

Workload Estimation

For more information about calculating online instruction time: ODEE Credit Hour Estimation.

[X] Course credit hours align with estimated average weekly time to complete the course successfully.

[X] Course includes regular substantive interaction well-suited to the learning environment at a frequency and engagement level appropriate to the course.

Provide a brief outline of a typical course week, categorizing course activities and estimating the approximate time to complete them or participate (required):

Watch weekly lecture videos = 180 minutes
Read assigned chapter of the textbook = 120 minutes
Complete weekly reading quiz = 60 minutes
Review slides from lecture videos = 60 minutes
Complete weekly exercise = 120 minutes

[X] In the case of course delivery change requests, the course demonstrates comparable rigor in meeting course learning outcomes.

Accessibility

For more information or a further conversation, contact the accessibility coordinator for the College of Arts and Sciences. For tools and training on accessibility: Digital Accessibility Services.

[X] Instructor(s) teaching the course will have taken Digital Accessibility training (starting in 2022) and will ensure all course materials and activities meet requirements for diverse learners, including alternate means of accessing course materials when appropriate.

[X] Information is provided about the accessibility of all technologies required in the course. All third-party tools (tools without campus-wide license agreements) have their accessibility statements included.

Description of any anticipated accommodation requests and how they have been/will be addressed.

Additional comments (optional):

Academic Integrity

For more information: Academic Integrity.

[X] The course syllabus includes online-specific policies about academic integrity, including specific parameters for each major assignment:

[X] Assignments are designed to deter cheating and plagiarism and/or course technologies such as online proctoring or plagiarism check or other strategies are in place to deter cheating.

Additional comments (optional):

Frequent, Varied Assignments/Assessments

For more information: *Designing Assessments for Students*.

Student success in online courses is maximized when there are frequent, varied learning activities. Possible approaches:

[X] Opportunities for students to receive course information through a variety of different sources, including indirect sources, such as textbooks and lectures, and direct sources, such as scholarly resources and field observation.

[X] Variety of assignment formats to provide students with multiple means of demonstrating learning.

[X] Opportunities for students to apply course knowledge and skills to authentic, real-world tasks in assignments.

Comment briefly on the frequency and variety of assignment types and assessment approaches used in this course or select methods above:

This class has weekly reading quizzes based on the readings from the textbook (n = 14). These are based on multiple choice questions, fill in the blank, matching, etc.

This class has exercises where the students apply their knowledge using real world applications. For example, identifying the location of cold fronts, determining wind direction, and cloud classification (n = 8).

There are 3 exams which are based on the readings, quizzes and exercises.

Community Building

For more information: Student Interaction Online.

Students engage more fully in courses when they have an opportunity to interact with their peers and feel they are part of a community of learners. Possible approaches:

☐ Opportunities for students to interact academically with classmates through regular class discussion or group assignments.

☒ Opportunities for students to interact socially with classmates, such as through video conference sessions or a course Q&A forum.

☒ Attention is paid to other ways to minimize transactional distance (psychological and communicative gaps between students and their peers, instructor, course content, and institution).

Please comment on this dimension of the proposed course (required)

Students will have the opportunity to interact with each other and the instructor through online weather discussion and a course Q&A forum. The instructor will also hold online review sessions where students can ask questions before each exam.

Transparency and Metacognitive Explanations

For more information: *Supporting Student Learning*.

Students have successful, meaningful experiences when they understand how the components of a course connect together, when they have guidance on how to study, and when they are encouraged to take ownership of their learning. Possible approaches:

☒ Instructor explanations about the learning goals and overall design or organization of the course.

☒ Context or rationale to explain the purpose and relevance of major tasks and assignments.

- [X] Guidance or resources for ancillary skills necessary to complete assignments, such as conducting library research or using technology tools.
- [X] Opportunities for students to take ownership or leadership in their learning, such as by choosing topics of interest for an assignment or leading a group discussion or meeting.
- [X] Opportunities for students to reflect on their learning process, including their goals, study strategies, and progress.
- [X] Opportunities for students to provide feedback on the course.

Please comment on this dimension of the proposed course (or select methods above):

There will be a review of the learning goals for each assignment. Each exercise and assignmer

Additional Considerations

Comment on any other aspects of the online delivery not addressed above (optional):

Syllabus and cover sheet reviewed by Bob Mick on 11/4/2024

Reviewer Comments:

I have reviewed the syllabus and have one recommendation:

1) Under the section of “How This Online Course Works” it would be helpful to include additional information about how the Professor will interact with students on a weekly basis that is mentioned in this cover letter. For example, include information about how the Professor will communicate regularly with students via class announcements and weekly emails, and interact with them through the weather discussion and Q & A forum in the Carmen discussion board, and finally that the instructor will also hold online review sessions where students can ask questions before each exam.

The ASC Office of Distance Education strives to be a valuable resource to instructors and departments in the College of Arts and Sciences. In addition to managing the DL course review process, hosting ASC Teaching Forums, and developing an ever-expanding catalog of instructor support resources, we also provide one-on-one instructional design consultation to ASC instructors interested in redesigning any aspect of their online course. If your department or any of your individual instructors wish to meet with one of our instructional designers to discuss how we can provide advice, assistance, and support, please do let me know.

Additional resources and examples can be found on ASC’s Office of Distance Education website.

Curriculum map, indicating how program goals are accomplished via specific courses
Atmospheric Sciences (Bachelor of Science)

KEY:	*1=Beginner*	*2= Intermediate*	*3 = Advanced*	

	Learning Outcome A	Learning Outcome B	Learning Outcome C	Learning Outcome D
Prerequisites or Corequisites:				
MATH 1151				1
MATH 1152				1
MATH 2153				1
MATH 2255				2
PHYSICS 1250	1	1		
PHYSICS 1251	1	1		
CHEM 1210	1	1		
STATS 2450				1
GEOG 3597.03 (EL)				
Required Core:				
ATMOSSC 2940 OR GEOG 5900	1	1	1,2	1
GEOG 5921	1	2	2	2
GEOG 5922	3		2	
ATMOSSC / GEOG 5940		3	3	3
GEOG 5941	3	2	3	2
GEOG 5942	3	2	3	3
ATMOSSC 5950	2	2	2	2
ATMOSSC 5951	3	2	2	2
ATMOSSC 5952	3	2	2	3
Electives:				
ATMOSSC 5701	2,3	2,3	3	2,3
ATMOSSC 5901	2	3	2	
GEOG 3900.01 OR GEOG 3900.02 OR GEOG 3901H	2		3	
GEOG 3597.02	1	2	1	
GEOG 5200	1	1	2	1
GEOG 5210	1	1		
GEOG 5225	2	2		2
EARTHSC 2206	1		1	
CIVILEN 5130	3	3		3
CIVILEN 5420	2	3		2

Learning Outcome A: Students acquire the theoretical basis for fundamental atmospheric processes and systems.

Learning Outcome B: Students are familiar with computational and other forms of technology used in the atmospheric sciences.

Learning Outcome C: Students can communicate atmospheric science concepts and methods orally, visually, and in writing.

Learning Outcome D: Students can solve problems faced by atmospheric scientists.

Revised 10/30/2024