Term Information

Effective Term	Summer 2025

General Information

Course Bulletin Listing/Subject Area	Atmospheric Sciences
Fiscal Unit/Academic Org	Geography - D0733
College/Academic Group	Arts and Sciences
Level/Career	Graduate, Undergraduate
Course Number/Catalog	5701
Course Title	Field Observations of Severe Convective Storms
Transcript Abbreviation	Convect Field Std
Course Description	This off-campus, experiential learning field course allows students to directly observe deep, moist atmospheric convection (thunderstorms) and associated phenomena through a 10-day field trip to the U.S. Central Plains, including daily morning and evening weather forecast discussions, identifying radar-based storm characteristics, and use observations to determine likelihood of server weather.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 12 Week
Flexibly Scheduled Course	Always
Does any section of this course have a distance education component?	Yes
Is any section of the course offered	Greater or equal to 50% at a distance
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture, Field Experience
Grade Roster Component	Field Experience
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Sometimes
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites	Prereq: ATMOSSC 2940, or GEOG 5900, and ATMOSSC 5940, and Instructor permission required.
Exclusions	
Electronically Enforced	Yes

Cross-Listings

Cross-Listings	None.

Subject/CIP Code

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

Requirement/Elective Designation

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

- Visually identify important physical storm structures including wall clouds, the forward flank downdraft and precipitation, the rear flank downdraft and precipitation, outflow boundaries, inflow bands, overshooting tops, hail cores, & mammatus clouds
- Identify radar-based storm characteristics including the mesocyclone, hail cores, outflow boundaries, hook echoes, tornadic vortex signatures, and tornadic debris signatures.
- Use observations and numerical weather model output to analyze current and future weather conditions to determine the likelihood of severe weather events and strategize locations for daily storm viewing.
- Justify decisions for targeting a certain location to observe convective events.
- Synthesize the concepts learned in the field to provide a 10-minute audio-visual, a post-trip debrief on a chase day of your choice through the analysis of maps, observations, photographs, videos, etc, and a recap of the logistical travel decisions.

Content Topic List

- Severe storms
- Field observation experience
- Convection
- Forecasting
- Weather observation

Sought Concurrence

No

Attachments

- Cover Letter_ATMOSSC 5701_Field Studies of Convective Severe Storms_Final_10.28.2024.pdf: ATMOSSC 5701_Cover Letter

  (Cover Letter. Owner: Godfrey,Ryan B)
- Syllabus_ATMOSSC 5701_Field Studies of Convective Severe Storms_Final_10.28.2024.pdf: ATMOSSC 5701_Syllabus

  (Syllabus. Owner: Godfrey,Ryan B)
- Curriculum Map_ATMOSSC BS_ ATMOSSC 5701_10.30.2024.pdf: ATMOSSC_Curriculum Map

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

Comments

- Curriculum map revised and uploaded per revision request (reflecting ATMOSSC 5701 elective). *(by Godfrey,Ryan B on 10/30/2024 04:16 PM)*
- If this course will be able to count in one of your majors (even as an elective), please upload the updated curriculum map(s) *(by Vankeerbergen,Bernadette Chantal on 10/30/2024 01:54 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Godfrey,Ryan B	10/28/2024 11:29 AM	Submitted for Approval
Approved	Coleman,Mathew Charles	10/28/2024 12:56 PM	Unit Approval
Revision Requested	Vankeerbergen,Bernadette Chantal	10/30/2024 01:54 PM	College Approval
Submitted	Godfrey,Ryan B	10/30/2024 04:16 PM	Submitted for Approval
Approved	Houser,Jana Bryn	10/30/2024 04:18 PM	Unit Approval
Approved	Vankeerbergen,Bernadette Chantal	10/30/2024 04:22 PM	College Approval
Pending Approval	Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Hilty,Michael Neff,Jennifer Vankeerbergen,Bernadette Chantal Steele,Rachel Lea	10/30/2024 04:22 PM	ASCCAO Approval

Cover Letter for Geog 5701: Field Studies of Severe Convective Storms

Dear ASCC,

The Department of Geography is proposing a new elective course for consideration in our Atmospheric Sciences B.S. major, entitled: Field Studies of Severe Convective Storms. This course is a non-traditional course as it is an experiential learning course with a majority of time spent out of classroom over the summer semester. As such, we are taking this time to explain the logistics of the course in this cover letter.

This course will be led by Dr. Jana Houser, an associate professor in the Department of Geography. Dr. Houser has over 20 years of storm chasing experience in the context of scientific field operations, personal chasing, and taking students into the field through a similar course at Ohio University, prior to her joining the faculty at OSU. Dr. Houser's research area of expertise is severe thunderstorms including those that produce severe convective hazards of hail, storm winds, and tornadoes. She has successfully taken students into the field in 2015, 2017, 2018, 2019, and 2022. The best place in the world to experience severe weather is the Central U.S. Plains. It is anticipated that the class will travel to this part of the country including states such as Kansas, Oklahoma, Nebraska, Texas, Colorado, New Mexico, Missouri, and Iowa.

The goals for the course, as identified in the syllabus, are to improve student forecasting skills, to teach strategies and logistical considerations for safe storm chasing, and to observe severe convective phenomena (and by so-doing, learn about storm structure, evolution, and dynamics.) The course will have a 3-week window specified for the completion of the field experience. However, students will only be in the field for a maximum of 10-days during that 3-week window. The reason for this strategy is because it is not known ahead of time when the weather will be conducive for making the experience successful. Therefore, to ensure maximum likelihood of experiencing the type of weather we want, the timeframe must be flexible. May is the climatological maximum for severe weather events across the U.S. so it is very unlikely that there will be a scenario where all three weeks are poor.

This course will be associated with substantial course fees that cover travel expenses that include ground transportation (vehicle rental) and hotel accommodations. In an effort to make this experience equitable, we have arranged for funds to be available that will cover these course fees from a generous donation made by alumnus Gary Sharpe. These fees will be available on a bi-annual basis for at least 10 years.

Owing to the nature of the field component and the allotted fund availability for fees, it is desirable that all students be contained within one vehicle and the enrollment be capped at 10 students. These 10 students will be selected based upon seniority (i.e credit hour completion and class ranking). Seniority in this respect would prioritize Rank 4 and graduating students, followed by Rank 3, Rank 2 respectively. Given the prerequisite of ATMOSSC 2940: Basic Meteorology (or GEOG 5900: Climatology), and GEOG 5940: Synoptic Meteorology Lab (ensuring a basic understanding of concepts and skillsets needed within field observations) this will likely exclude Rank 1 placement into this course, as GEOG 5940 is typically taken spring of sophomore year in the standard major curricula

In terms of credit breakdown, although the course is only 8 days of field work, students will be engaged in learning activities including morning weather briefings, en-route data and forecast monitoring, in situ observations, and post-day debriefs. The responsibilities and applied hours of course work easily total 12 hours of learning experience per day. Over the 8 day field experience, this would equate to an approximate total of 48 hours. For a regular course, 3 hours per week over 14 academic weeks equates 42 hours of instruction. Furthermore, there will be 4 pre-trip meetings that will occur in April, prior to the start of the experience, comprised of1 overall informational meeting, 1 intensive forecasting lecture, 1 forecasting practicum, and 1 pre-trip overview during finals week. Each of these meetings are 2 hours, making an additional 8 hours of instruction; for a total of 56 instructional hours. Lastly, there will be homework for the pre-trip meetings, journaling and reflection requirements at the end of chase days and during transit, as well as a final project that will be an in-depth case study of one of the chases during our trip.

In addition to working with Dr. Bernadette Vankeerbergen, the Department of Geography has also been in contact with the Office of the University Registrar, who has approved the offering of the 4 pre-trip meetings in April (during Spring semester), prior to the formal start of the 4-week May summer semester. We are able to request a flexible schedule, which enables this option to be viable. Furthermore, we received confirmation that students who will be graduating at the end of Spring semesters in the May that the course will be offered can participate in the class using a non-degree hours option, per communication with Bernadette on 4/11/2024.

It is noted that there is inherent risk associated with field experiences that range from vehicular accidents to storm related hazards. Dr. Houser has spoken with Terry Rodeman with OSU risk management, who has provided guidance and approval of this course.

Thank you for your consideration of this course.

Sincerely,

Dr Jana Houser
Director of Undergraduate Studies
Department of Geography

THE OHIO STATE UNIVERSITY

College of Arts and Sciences
Department of Geography

SYLLABUS
GEOG 5701

Field Observations of Severe Convective Storms
Summer 2025 – Course # XXXXX
Course Components: (Date specific lectures and field experience)

Instructor: Dr. Jana Houser

- Email address: houser.262@osu.edu
- Phone number: Will be provided in class
- Office hours: Wednesdays 2:30 pm - 4 pm, by appointment, or anytime my door is open

Graduate Assistant Director: TBD

- Email address: TBD. ###@buckeyemail.osu.edu
- Office hours: N/A

COURSE OVERVIEW

Course Information:

- **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, exercises, research and assignment preparation, for example) to receive a passing grade.

  **Although this course only meets for a short window of time, the field experience is extremely high-impact. Students will be living course content for ~12 hours per day for 8 days, and at least 6 days through briefings and discussions on the first transit day = 102 hours. Credit justification: pre-trip meetings = 8 hours class + 16 hours prep out of class = 24 hours; post trip analysis = 3 hours + 6 hours out of class = 9 hours. Total credits: 102+24+9 = ~135 contact hours, which is equivalent to a 3-credit hour course.*

- Major Credit: This course satisfies 3-credits of electives that counts towards the 6 elective credits required for Atmospheric Science majors.

- Prerequisites: GEOG 2940, or GEOG 5900, and GEOG 5940: Synoptic Meteorology Lab
- Mode of delivery: In person lectures, In-Field Experience (Experiential learning)
- Lecture Structure: Four 120-min in person pre-trip meetings will be scheduled in April prior to trip departure. Following the trip return, 1 2-hour virtual meeting for final project delivery
    - 2025 Pre-trip Meeting Dates: 4/9, 4/16, 4/23, 4/30 (Thursdays)
    - Time: 5:00-7:00 PM
    - Location: Derby 1080
    - 2025 Post-trip Debrief: 6/4 2:00-4:00 (Please plan work schedules accordingly!)
- Field Component: 8 days of in-field experiential learning plus 2 travel days within the window of 5/5/2025 - 5/25/2025; 10-12 hours per day of direct engagement with course material. (Details contained within)
- Enrollment: Because this course requires considerable logistical decision making on the fly, and we need to maintain manageable numbers of transportation vehicles and hotel rooms, ***this class is limited to 10 student participants***. Students may enroll more than once during their academic career, but **will only be granted credit one time**. Enrollment will require instructor permission.

COURSE MATERIALS AND TECHNOLOGIES

Course Textbook: None required

- *Suggested Textbook: Mesoscale Meteorology in Midlatitudes,* by Paul Markowski and Yvette Richardson. ISBN 978-0-4707-4213-6.

Required Course Technology:

- A mobile device (smartphone or tablet) with reliable cellular-based internet (ATT, Verizon preferred) for data coverage while in transit
- Webcam: built-in or external webcam, fully installed and tested
- Microphone: built-in laptop or tablet mic or external microphone
- OPTIONAL: A laptop for writing journal entries on the road

Course Description:

This off-campus, experiential learning field course allows students to directly observe deep, moist atmospheric convection (thunderstorms) and associated phenomena through a 10-day field trip to the Central Plains of the US. Since weather patterns are not fixed to specific dates, the logistics of this field trip will be dynamic and fully mobile for the entire duration of the field experience. We will travel to where severe weather is most likely to occur (which is a function of the synoptic and mesoscale weather patterns). Students will be expected to actively participate in daily morning and evening weather forecast discussions, during which our destination for the day and our plan of travel for the coming days will be determined. Other educational activities, such as visits to research labs like the National Weather Center, the National Center for Atmospheric Research, National Weather Service Forecast Offices, the Atmospheric Radiation Measurement site, and other similar activities, may be conducted at the discretion of the instructor if it is determined that the trip is unlikely to observe atmospheric convection on a particular day. All students are required to participate in all activities and are expected to have at least a basic knowledge of weather analysis, including map analysis skills, basic atmospheric surface and upper-air patterns, and forecasting. (Prerequisite: Geog 5940) Due to the inherent variability and unpredictability of the weather, there is no guarantee that any particular type of weather will be observed, although decisions for departure will be strategically made to maximize the likelihood of seeing storms.

Goals and Expected Learning Outcomes (ELOs)

Course-based Goals

1) Visually identify important physical storm structures including wall clouds, the forward flank downdraft and precipitation, the rear flank downdraft and precipitation, outflow boundaries, inflow bands, overshooting tops, hail cores, & mammatus clouds.
2) Identify radar-based storm characteristics including the mesocyclone, hail cores, outflow boundaries, hook echoes, tornadic vortex signatures, and tornadic debris signatures.
3) Use observations and numerical weather model output to analyze current and future weather conditions to determine the likelihood of severe weather events and strategize locations for daily storm viewing.
4) Justify decisions for targeting a certain location to observe convective events.
5) Synthesize the concepts learned in the field to provide a 10-minute audio-visual, a post-trip debrief on a chase day of your choice through the analysis of maps,

observations, photographs, videos, etc, and a recap of the logistical travel decisions made on that day.

HOW THIS COURSE WORKS

Mode of classroom delivery: This course will be delivered in-person, both in the classroom and in the field, with the exception of the final project presentation.

Pre-trip meetings: In place of regular lectures, there will be 4 pre-trip meetings held in April to prepare students for the trip. These pre-trip meetings will provide the topical information and practical experiences needed to succeed in this course. All pre-trip course materials will be accessible from OSU's **Carmen Canvas** interface and final projects will also be uploaded to Carmen.

In field portion: Because this course is dependent upon the observation and forecasting of severe convective storms, there is inherent uncertainty to when the trip will depart as we need to work around atmospheric conditions. A window of roughly 20 days is provided in an effort to maximize the likelihood for success in seeing the convective phenomena we wish to observe. I CANNOT PREDICT WHEN WE WILL BE OUT during that window of time. As such, you must assume it could be any time in that window. If you wish to participate in this course, you must ensure your availability during the entire possible window of in-field operations. If you cannot commit to this, you are asked to withdraw from the course. The decision to leave will likely be made with limited fore-warning. However, I will provide a MINIMUM of 24-hours notice prior to departure. We will leave from OSU. Students are responsible for finding their own mode of transportation to OSU prior to trip departure. I will provide frequent updates prior to departure to indicate the likelihood that we will depart in the coming days, and I will also provide weather briefings with those updates.

*IF YOU HAVE A DOCUMENTED DISABILITY THAT PRECLUDES YOU FROM JOINING IN THE FIELD, but you still wish to participate, contact the instructor right away to discuss accommodation possibilities.

- ***Travel Arrangements:*** We will be renting 12-passenger vans and driving from OSU to the Great Plains of the US. I cannot foresee where we will end up even a day ahead of time, but strategically, you can expect to travel to states such as Texas, Oklahoma, Kansas, Nebraska, Colorado, New Mexico, etc. Owing to the dynamic nature of the weather, I cannot make hotel accommodations in advance. Hotel arrangements will be made after the day's chase is over, with a combined strategy of minimizing travel time to the overnight destination, and simultaneously positioning strategically for the following day's anticipated weather. **Please note:** We will be spending on the order of **10+ hours per day driving**, on most days, and expect to cover ~5000 miles in our 10-day experience.

- ***Food Arrangements:*** We will stay at hotels that offer continental breakfasts for the morning. Lunch will be obtained on the road, typically from a grocery store, fast-food or gas station source. It is often wise to get a surplus of food at lunch and save the excess food for later in the day. Most severe weather occurs during the dinner-time hours between 4:00-8:00 PM local time. As such, dinners are typically eaten after the day is over, and often require up to an hour of driving until a town is found. On days when we are not actively chasing, a nicer dinner at a sit-down restaurant is possible. If you have certain dietary restrictions or medical conditions (food restrictions, allergies, diabetes, etc.) you are required to take responsibility for managing your condition while on the road, acknowledging an irregular eating schedule is guaranteed.)

Attendance and participation requirements: Student attendance and participation during pre-trip meetings will be tracked by an attendance sheet, as well as completion of assignments. Students are to be actively involved with all activities including pre-trip, in field, and post trip activities. It is acknowledged that there will by a substantial amount of transit time when we are not actively observing convection. However, you are expected to be engaged at all times we are in active chase mode or enroute to a chase destination. This includes looking at observations and model data, monitoring radar and satellite data, and participating in instructor-led discussions.

GRADING AND FACULTY RESPONSE

How your grade is calculated (% breakdown)

A	A-	B+	B	B-	C+	C	C-	D+	D	E
>92.5%	89.5 – 92.49%	87 – 89.49%	82.5 – 86.99%	79.5 – 82.49%	77 – 79.49%	72.5 – 76.99%	69.5 – 72.49%	67 – 69.49%	60 – 66.99%	<60%

GRADE CATEGORY	% OF TOTAL GRADE
Pre-trip Meeting Attendance/Participation	10%
Pre-trip Exercises & Discussions	20%
In-Field Participation	20%
Daily Weather Journal	30%

Post-Trip Analysis/Presentation	20%
Total	**100**

Grade Category descriptions:

Pre-trip Meeting Attendance/Participation (10%): The first pre-trip meeting will provide an overview of what to expect during the course, student participation expectations, and an introduction to the atmospheric conditions needed for severe convective storms. The second meeting will provide a crash-course on map analysis and tools including skew-T's and hodographs, radar, and satellite imagery specific to severe storms so students are equipped to make their own forecasts and in-situ assessments of environmental conditions to identify favorable locations where storms might occur. The third meeting will be a group forecasting practicum where students will receive an anonymized but real historical severe weather case study. They have to identify where they would target and justify their decisions. The fourth meeting is a pre-trip meeting that will provide students with information about departure prospects and additional details on what to expect during the trip, including safety protocol, travel arrangements, logistical considerations while in the field (meal arrangements, hotel plans, daily schedules, etc.), and will discuss the time frame and mode of communication pending the decision to leave for the in-field portion of the course. The grade for this grade category will be assessed based on whether or not students are in attendance during the 4 pre-trip meetings, and engaging with the professor and their peers, asking questions, being attentive, etc.

Pre-trip Exercises & Discussions (20%): There will be 3 assignments to be completed in combination during pre-trip meeting time and outside of the classroom. (After pre-trip meetings 1, 2 and 3.) The exercise after pre-trip meeting 1 will ensure students understand the ingredients required for severe convective storm environments. The exercise after pre-trip meeting 2 will be direct applications of the tools taught in the meeting (e.g., hodographs, skew-T's, satellite and radar observations). Students will analyze storm environments using Skew-T's and hodographs, and will identify storms and storm attributes from satellite and radar images. Both assignments 1 and 2 are due 1 week after the associated pre-trip meetings. During pre-trip meeting 3 there will be a third assignment which will be a group-decision based assignment to be completed during the meeting. It will be a simulation of what we will be doing in the field during weather briefings and assessments on the road where students make decisions about where they would target storms. Following this, the class will see the outcome of the actual event and will discuss together the decisions made by the groups. This last exercise will be mostly graded on completion because many answers are subjective and there is not always a clear "right" answer, although bogus or un-thoughtful answers will not be awarded credit.

In-Field Participation (20%): Your participation in this experience is crucial to the skills you personally take away from this trip. Full participation includes attending all morning meetings, and post-trip meetings that are held, contributing to forecast discussions, engaging in discussion while traveling, actively learning about storm structure, forecasting strategies, etc., timely arrival for discussions and departure, and an overall positive attitude.

Weather Journals (30%): You will be required to keep a journal with daily entries (digital is required), that must be submitted within five business day of our return to Ohio (by 9:00 pm the fifth day). Your journal must contain the following elements:

a) The date the entry is valid for as well as the approximate time you are writing the entry. (The most feasible time for this to be done is likely in the morning, just after we depart the hotel, or at night, prior to bed, while information is fresh. You can also make multiple entries over the course of the day to keep track of decision making)
    i. Each entry must specify the SPC risk category for the day including the percent likelihood of tornadoes, wind, and hail.
b) Each daily entry must include your own personal assessment of the day's environment (done at the beginning of the day or the night before - NOT post mortem). This needs to include a discussion of the following:
    ii. Synoptic/mesoscale environment (placement of lows/highs, troughs/ridges, general surface and mid to upper-level conditions, dryline, outflow boundaries, etc.)
    iii. a discussion of severe weather parameters including CAPE, shear, flow conditions, moisture, etc. Please be sure to QUANTIFY parameters you discuss. Simply saying "high CAPE" is not sufficient.
c) The location you would target **and why** (done at the beginning of the day or night before).
d) A reflection of how the day panned out, what we saw, what happened and why, etc. (done at night)
e) Any other personal feelings and thoughts you wish to express

Virtual final presentation (20%): Following the return of the trip, a post-trip debrief period is scheduled for students to present their final projects and to discuss any trip details that need to be revisited. Each student will revisit one of the events from during the trip and will provide an extensive case-study analysis of the environment, storm evolution, and decisions made when we were in the field. An orated PowerPoint presentation 10 minutes in length will be delivered. Students will be graded based upon their proper analysis of the environment, the appropriateness of scientific content and discussion, and the visual and oral communication aspects of the presentation.

Late assignments

Owing to the compressed time schedule of this course, late assignments will only be accepted if special arrangements are made with the instructor owing to extenuated circumstances. In

order for the student to receive credit, the MUST contact the instructor within 24 hours of the due date or the assignment will automatically be awarded a 0.

Instructor feedback and response time

The following list is provided to give you an idea of the instructor's 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:** Feedback should be expected no more than 7 days after the due date of the assignment.
- **Email:** The instructor will generally reply to emails and Carmen messages within **24 hours on days when class is in session at the university**.

COURSE SCHEDULE

Meeting Type	Date	Topics	Supplementary Material (for reference)	Assignment Due
Pre-Trip 1 (Columbus)	4/9	Intro to course, basic logistics Storm environments primer	Markowski & Richardson Ch 8	Storm Environment Evaluations, due 4/15
Pre-Trip 2 (Columbus)	4/16	Storm environment tools (Surface observations, upper air analyses, radar, satellite, skew-T's)	Markowski & Richardson Appendix, Ch. 2.6, 2.7	Analysis Tools Assignment, due 4/22
Pre-Trip 3 (Columbus)	4/23	Group case study	N/A	Case Study, due end of class 4/22
Pre-Trip 4 (Columbus)	4/30	Pre-trip logistics, weather briefing, safety	N/A	None

In-Field Experience (Course Trip in US Plains)	5/5-5/25	*ONLY 10 DAYS within this window	N/A	Trip Journal, due within 5 days of trip return
Post-Trip Final Presentation (Columbus)	5/30	3 hours. Virtual, but please upload all presentation materials to Carmen Canvas	N/A	Presentation, due 5/30

COURSE SPECIFIC POLICIES

1. You are expected to be punctual to meetings and discussions**, as well as departures**.
2. You are expected to be subordinate in the decisions made during the trip. Dr. Houser holds all rights for final decisions, although student thoughts and opinions will be taken under consideration, even if it ends up that the student decisions resulted in missed opportunities.
3. Drivers are expected to obey the laws of the road and to maintain appropriate speed limits.
4. **Alcohol**: Only participants of legal age may consume alcohol. *No alcohol will be permitted for use after dinner hours have ended*. *No alcohol is permitted for use in the hotel*. Excessive alcohol consumption will seriously reduce your ability to function in a manner conducive for success in the field, and students who are of age are encouraged not to consume excessive quantities. Abuse of alcohol could result in a referral to Community Standards and Student Responsibility. In severe cases, it could result in your dismissal from the program.
5. You are expected to treat others (participants, leaders, locals) with respect. Remember, you are representing Ohio State University!
6. **Use of illegal or otherwise mind-altering substances will be grounds for immediate dismissal from the program without refund and will result in referral to Community Standards and Student Responsibility**
7. **You are required to treat your fellow students with dignity and respect. Each person on the trip deserves to feel safe, appreciated, respected, and heard.**
8. Students are required to provide proof of health insurance. Failure to do so will result in the student not being allowed to participate in the trip.
9. Students will be allowed to drive the passenger vans. Proof of car insurance and a clean driving record are required. The maximum number of consecutive hours any one person will be allowed to drive is 4.
10. Students will be required to identify a “buddy”. This will be their hotel roommate and it will be required that buddies know where each other are at all times. Prior to any departure, there will be a buddy check to confirm that no one is left behind.

Additional information regarding the execution of this trip:

The decision of when to leave is often a tricky one. Long-term forecasting for convective events is generally poor or inconsistent. As such, there might not be much lead time prior to a “Go” status being issued. Students will receive formal notification of a “Go” date within 24 hours of departure, at the minimum. There may be situations where we let a one-day high impact event pass in an effort to secure a better multi-day stretch of storms later on. However, the general philosophy will be that we will tend to favor early departure opportunities over later ones. Dr. Houser will send frequent email updates regarding the weather outlook and possibility for field operations to begin.

We will be making decisions in a fast-paced and rapidly changing environment. Certain circumstances may feel stressful for individuals who are not familiar with storm chasing. Prior to committing to participate in this trip, you are asked to self-reflect on your ability to handle stressful situations. If you are concerned about this, you may speak with the instructor and/or reconsider your participation.

The field experience is intense and will require you to be spending long hours (12-16) per day in the car. If you have a condition that inhibits you from physically participating in the field trip experience, but you would still like to participate remotely, please contact Dr. Houser and we can see if we can arrange accommodations through Zoom, video streaming, etc.

Owing to the nature of the changing atmosphere, it is impossible to know with any detail what the outcome of any given day will look like. We will not know in the morning where we will end up in the evening. Dr. Houser has 10+ years of experience in leading student field experiences. She will coordinate all logistics including hotel stays.

In the event of a medical emergency, the assistant director will stay with the affected individual, either in a hotel room, or at a medical care facility. The student identified emergency contact of any affected individual will be contacted in a timely manner. Dr. Houser has a list of major hospitals in all states where we will be traveling.

We will be leaving from and returning to Ohio State’s campus. You are responsible for arranging your own transportation and lodging accommodations prior to and immediately after the trip departs and returns to and from campus. We will be renting on 16-passenger vans, which will accommodate a total of 12 people. We need to reserve space for luggage! PACK LIGHTLY!

Dr. Houser will provide a list of things to pack (and things to leave at home!) during our final pre-trip meeting.

Approximate daily schedule:

8:30 AM – Breakfast at hotel, pack up rooms.*

9:30 AM – Weather briefing in hotel lobby or breakfast area, identify preliminary target area for the day's field observation.

10:00-10:30 AM – check out of rooms, hit the road

10:30 AM -12:30 PM - travel toward target location.

12:30 – 1:00 PM - Break for lunch, re-evaluate destination.

1:00 - 3:30 PM – Continue driving to destination.

3:30-5:00 PM – Adjust destination if needed, wait for storms to initiate.

5:00-9:00 PM – Observe convection

9:00-10:30 PM – Dinner, travel to hotel for the night.

*In some cases, if we end up far away from our day 2 target after our chase on day 1, we might leave earlier than this.

Copyright disclaimer

Academic integrity policy

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-48.7 (B)). For additional information, see the Code of Student Conduct.

Course Specifics on Academic Integrity:

- **Written assignments**: Students' written assignments, should be their own original work. For the pre-trip assignments, group work IS allowed and encouraged, but written answers must be personal and unique. Copying another's work is not permitted.
- **Reusing past work**: In general, students are prohibited in university courses from turning in work from a past class, even if modified. Students should discuss the situation with instructors in advance if there is any doubt.
- **Final project**: This should be an individual, independently executed project. Team work is prohibited.
- **AI policy**: Use of AI for any portion of your work is strictly prohibited. Written assignments, journals, and final projects must be YOUR personal work and writing.

Disability Services

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. 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.

If you are ill and need to miss class, including if you are staying home and away from others while experiencing symptoms of a viral infection or fever, please let me know immediately. In cases where illness interacts with an underlying medical condition, please consult with Student Life Disability Services to request reasonable accommodations. You can connect with them at slds@osu.edu; 614-292-3307; or slds.osu.edu.

Religious Accommodations

Ohio State has had a longstanding practice of making reasonable academic accommodations for students' religious beliefs and practices in accordance with applicable law. In 2023, Ohio State updated its practice to align with new state legislation. Under this new provision, students must be in early communication with their instructors regarding any known accommodation requests for religious beliefs and practices, providing notice of specific dates for which they request alternative accommodations within 14 days after the first instructional day of the course. Instructors in turn shall not question the sincerity of a student's religious or spiritual belief system in reviewing such requests and shall keep requests for accommodations confidential.

With sufficient notice, instructors will provide students with reasonable alternative accommodations with regard to examinations and other academic requirements with respect to students' sincerely held religious beliefs and practices by allowing up to three absences each semester for the student to attend or participate in religious activities. Examples of religious accommodations can include, but are not limited to, rescheduling an exam, altering the time of a student's presentation, allowing make-up assignments to substitute for missed class work, or flexibility in due dates or research responsibilities. If concerns arise about a requested accommodation, instructors are to consult their tenure initiating unit head for assistance.

A student's request for time off shall be provided if the student's sincerely held religious belief or practice severely affects the student's ability to take an exam or meet an academic requirement and the student has notified their instructor, in writing during the first 14 days after the course begins, of the date of each absence. Although students are required to provide notice within the first 14 days after a course begins, instructors are strongly encouraged to work with the student to provide a reasonable accommodation if a request is made outside the notice period. A student may not be penalized for an absence approved under this policy.

If students have questions or disputes related to academic accommodations, they should contact their course instructor, and then their department or college office. For questions or to report discrimination or harassment based on religion, individuals should contact the Office of Institutional Equity. (Policy: Religious Holidays, Holy Days and Observances)

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 or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life’s Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach

an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available 24/7 **by dialing 988 to reach the Suicide and Crisis Lifeline**.

Statement on Title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.edu or by contacting the Ohio State Title IX Coordinator at titleix@osu.edu.

Statement on Diversity

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

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.

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.

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