

**ESCI 3131 – Severe Weather Honors
Section 350 (Mon/Wed/Fri, 11:30 a.m.-12:25 p.m., JN 222)**

**Course Syllabus
Spring 2018**

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Office Hours
10-11 a.m. Tue-Thu
and by appointment

I encourage you to talk to me individually whenever you need to discuss your progress in the course or whenever you have a topic of special interest you want to discuss individually.

COURSE WEBSITE

elearn.memphis.edu (eCourseware)

COURSE TEXTBOOK

Severe and Hazardous Weather: An Introduction to High Impact Meteorology, 5th Edition, by Rauber, Walsh, and Charlevoix

The textbook will be supplemented with free modules from MetEd (www.meted.ucar.edu).

ABOUT THE COURSE

The study of severe weather covers a variety of topics including: blizzards, ice storms, thunderstorms, tornadoes, hurricanes, floods, and heat waves. The objectives of this course are to provide students with 1) an understanding of the physical processes important in the formation of these severe weather phenomena and 2) a working knowledge of state-of-the-art tools used to observe and forecast severe weather. Prerequisite: ESCI 1010.

GRADES

Your grade at the end of the semester will be determined based on your scores on 1) the mid-term and final exams, 2) six exercises, 3) a term paper, and 4) any extra credit. Final grades will be determined from a total of 420 points:

Grade	Points Needed	Average Percentage
A	378	90%
B	336	80%
C	294	70%
D	252	60%

Exams:

Two exams are scheduled for this course—a mid-term and a final. Each exam is worth 100 points, and will take the format of fill-in-the-blank and discussion questions. While each chapter can build on previous chapters, exams only cover the new material presented. In other words, material on the mid-term exam will not show up on the final exam.

Exams can be made up, but you must have a legitimate, verifiable, and an unavoidable reason. If you know you are going to be absent, then please make arrangements for a makeup

before the exam. If you miss an exam because of an unforeseen emergency, arrangements to make it up must be made as soon as you return to campus. Please note that while makeup exams will be in the same format and cover the same material, they may not ask the same questions. The last day to makeup an exam is Study Day, 26 April 2018.

Exercises:

There will be six exercises worth 20 points each, and are due at the beginning of class on the date listed. You may work on these exercises in groups if you wish, but each student must turn in their own set of answers.

It is better to hand in exercises late than not at all. Any exercises turned in late, however, are subject to a grade penalty. The later an exercise is, the more stiff the penalty. For each class period that an exercise is late, 10% of the maximum points will be subtracted. Please note, the last day to turn in late exercises is Study Day, 26 April 2018.

Term Paper:

In order to receive honors credit for this course, you will need to complete a term paper. Keep in mind you are enrolled in an honors section, so failure to complete the term paper will negatively impact your grade. Your assignment is to research a significant severe weather event of interest to you. This could be a winter storm, a severe thunderstorm event, a hurricane, a drought, etc. Research this event and write a paper about the event complete with figures/tables that describes the meteorological conditions that came together and the associated impacts. This paper should be around 4-6 pages typed (double spaced using 12-point font or lower). You may upload this term paper to Dropbox on eCourseware. It is worth 100 points and due on Study Day, 26 April 2018.

Possible Field Trip:

Provided the atmosphere produces severe thunderstorms at the right time, a field trip may be scheduled that will give you an opportunity to apply the coursework to thunderstorms in the real atmosphere (i.e., we will storm chase). If this field trip occurs, it will be completely optional and every attempt will be made to give you as much "heads-up" as possible (often potentially big events can be seen 4-5 days in advance). If the field trip occurs and you decide to go, you will need to sign a form that releases the University of Memphis from liability.

Extra Credit:

I often find extra credit to be a valuable resource, and an additional 20 points can be added to your final point total by doing one of two things. If the field trip occurs, go on the field trip and then write a 2-3 page summary about your experience. The second way to earn extra credit would be to research another significant severe weather event of interest to you above and beyond the required term paper (though it does not need to be as long). This could be a winter storm, a severe thunderstorm event, a hurricane, a drought, etc. Research this event and write a 2-3 page summary of the event. What were the meteorological conditions that came together? What impacts occurred?

You may only do one extra credit. Please turn in your summary typed (double spaced using 12 point font or lower). You may upload these summaries to Dropbox on eCourseware. Extra credit can be turned in at any time up through Study Day, 26 April 2018.

Attendance:

I will not call roll. I am assuming that you can make your own decisions about class attendance and how it might influence your performance. However, it is in your own best interest to attend class for a couple of reasons. First, this is a 3000-level course in one of my areas of expertise and class lectures will likely go beyond the textbook at times. Second, I will

memorize your names and faces and will know who comes to class regularly. I may use such information to give the benefit of doubt to borderline grade situations. My experience has shown students who miss a number of days, do not perform as well on exams as they could have had they attended class.

STUDENT CONDUCT

Academic Dishonesty:

Cheating, plagiarism, or any other form of academic dishonesty will not be tolerated. Cases of academic dishonesty will be dealt with in accordance with the policies set forth in the University's Code of Student Rights and Responsibilities available at <http://www.memphis.edu/studentconduct/pdfs/csrr.pdf>. It is your responsibility to understand these policies. A lack of understanding is not an adequate defense against a charge of academic dishonesty.

Cell Phones, Laptops, Tablets:

The use of cell phones, laptops, or tablet computers for purposes other than note taking is not allowed during class. Flagrant violation of this policy will result in you being dismissed from class.

STUDENTS WITH DISABILITIES

Any student who may need class or test accommodation based on the impact of a disability will need to contact Student Disability Services (SDS) at 110 Wilder Tower, 678-2880. SDS coordinates accommodations for students with documented disabilities. Once you receive your documentation from SDS, you are encouraged to schedule a meeting with me to provide me with the paperwork and discuss any accommodations needed for examinations and class materials.

COURSE SCHEDULE

Note: There is always a chance that this schedule could change. Any changes will be announced in class and updated in this syllabus on the course website.

Date	Topic	Chapter
17 January	Atmospheric Properties and Measurements	1 / 2
19 January	Weather Maps and Computer Models	3 / 4
22 January	Weather Maps and Computer Models	3 / 4
24 January	Atmospheric Stability	6
26 January	Forces and Development of Pressure Systems	7 / 8
29 January	Air Masses and Fronts	9
31 January	Extratropical Cyclones	10 / 11
2 February	Extratropical Cyclones	10 / 11
5 February	Ice Storms and Lake Effect Snowstorms	12 / 13
7 February	Ice Storms and Lake Effect Snowstorms	12 / 13
9 February	Cold Waves and Blizzards	14 / 15
12 February	Cold Waves and Blizzards	14 / 15
14 February	Mountain Snowstorms and Windstorms	16 / 17
16 February	Mountain Snowstorms and Windstorms	16 / 17
19 February	Mid-Term Exam	

21 February	Thunderstorms	18
23 February	Thunderstorms	18
26 February	Thunderstorms	18
28 February	Thunderstorms	18
2 March	Tornadoes	19
5 March	No Class – Spring Break	
7 March	No Class – Spring Break	
9 March	No Class – Spring Break	
12 March	Tornadoes	19
14 March	Tornadoes	19
16 March	Hail, Lightning, and Downbursts	20 - 22
19 March	Hail, Lightning, and Downbursts	20 - 22
21 March	Hail, Lightning, and Downbursts	20 - 22
23 March	Guest Lecture	
26 March	Storm Chasing	
28 March	Storm Chasing	
30 March	Storm Chasing	
2 April	Tropical Cyclones	24
4 April	Tropical Cyclones	24
6 April	Tropical Cyclones	24
9 April	Floods	25
11 April	Guest Lecture	
13 April	No Class	
16 April	Floods	25
18 April	Floods	25
20 April	Drought	26
23 April	Drought	26
25 April	Heat Waves	27
30 April (10:30 a.m.- 12:30 p.m.)	Final Exam	

***Note: 26 April 2018 is the last day to makeup missed exams, turn in late exercises, and turn in extra credit**