GEOG 312 – Severe and Hazardous Weather

Section 001, 3 Credits
Spring 2012

Instructor: Dr. Darren B. Parnell
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Class Meetings: MWF 10 – 10:50 a.m.; Henson Hall 154

Texts: R.M. Rauber, J.E. Walsh, and D.J. Charlevoix. *Severe and Hazardous Weather*, 3rd Edition. Kendall/Hunt, 2008. ISBN 978-0-7575-5043-0

R.M. Rauber, J.E. Walsh, and D.J. Charlevoix. *Severe and Hazardous Weather: Active Learning Exercises*, 3rd Edition. Kendall/Hunt, 2008. ISBN 978-0-7575-5162-8

Course Description: This course provides students with a detailed examination of the physical and societal aspects of severe and hazardous weather in an effort to better our knowledge of the atmospheric environment around us. The objectives of this course are to examine the atmospheric processes that lead to severe weather events and develop an understanding of the impacts of extreme weather and climate events. Specific topics to be covered include extratropical cyclones, thunderstorms, tornadoes, severe winter weather, hailstorms, lightning, and tropical weather systems. Case studies will be used to investigate human, economic, and environmental consequences of severe and hazardous weather events. Upon completion of this course students should be able to demonstrate proficiency in visual identification of thunderstorm features, diagnose synoptic-scale conditions favorable for severe weather development, explain the evolution of a tropical storm system, and summarize the effects that an El Niño or La Niña event has on global weather patterns.

Prerequisite: GEOG 201 (Weather and Climate)

Exams: This course has a total of four exams worth **150 points** each. Exam questions will come from class lectures and the textbook. Each exam will be administered as scheduled. All exams count for a portion of the final grade; none can be dropped. The exams will comprise 60% of your final grade.

Make-up Exams: Any student missing an exam will be required to take an alternative examination. It is the **student's responsibility** to inform the instructor of the missed exam **within one class day** after the original exam is given in order to schedule a make-up exam. Anyone failing to comply with this policy will receive a zero for the missed exam.

Take-home Exercises: This course has several take-home exercises throughout the semester that are designed to reinforce the lecture material. The exercises will be assigned in class and come from the required workbook. The take-home exercises will comprise approximately 23% of your final grade.

In-class Exercises and Class Participation: Random in-class exercises will be assigned throughout the semester from the workbook, you must be present to complete the in-class exercises, they cannot be made up. The in-class assignments are designed to determine your attendance and test your comprehension of the course material. Since the in-class exercises will come from the workbook, **you must bring your workbook to class every day**. Class participation and in-class exercises will comprise approximately 17% of your final grade.

Weather Forecasting Contest: All students in this class are strongly encouraged to enter the department's weather forecasting contest. The forecasting contest consists of two forecasts per week, submitted each Monday and Wednesday, that predict the weather for the following Tuesday and Thursday. The forecasting contest will begin on Monday, February 6. You will receive more information concerning the contest in class.

Grades: This course has a total of 1,000 points. Each student's grade for this course will be determined by a percentage based on the total points accumulated by that individual, divided by the total number of points possible (1,000). Letter grades will be assigned as follows:

Letter Grade	Percentage of Points	Total Points
A	90.00 – 100%	900 – 1,000
B	80.00 – 89.99%	800 – 899
C	70.00 – 79.99%	700 – 799
D	60.00 – 69.99%	600 – 699
F	0.00 – 59.99%	Below 600

Attendance: Attending class is important. Coming to class, paying attention and taking notes is perhaps the best way to learn the course material. Lecture attendance is essential for a thorough understanding of the course material. You will not be successful in this course if you repeatedly miss class. Most lectures will come from the textbook, but some material will only be presented in class.

Classroom Environment: Students are expected to contribute to an environment appropriate for learning that considers and respects the needs and rights of others. Any academic misconduct will be confronted and handled accordingly. Do not arrive late and do not leave early.

Electronics Policy: Due to the rapid advancements in technology I have instituted a policy on the use of various electronic devices in lecture and lab. **All electronics devices must be silenced and put away completely out of sight while in class. NO TEXTING!!!** You will receive one warning for the first infraction. After that I can penalize you 5 points for each subsequent infraction. MP3 players are also prohibited.

Academic Integrity: Cheating, plagiarism and other forms of academic dishonesty will not be tolerated in this course. Students should pay special attention to the expectations discussed in the Student Handbook and 2010-2012 University Catalog. As commonly defined, plagiarism consists of passing off as one's own ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have the permission of that person. Violating these rules will result in significant grade penalties up to and including a failing grade for the course. Extreme cases of academic misconduct can result in expulsion from the University.

Writing Across the Curriculum: All writing assignments, both formal and informal, are in support of Salisbury University's Writing Across the Curriculum Program.

Important University Dates for Spring 2012
Last day to drop/add – Friday, February 3, 2012
Last day to withdraw from course to receive a "W" – Friday, April 6, 2012
Commencement Exercises – Saturday, May 19, 2012

Changes to Syllabus: This syllabus may be modified or changed by the instructor as necessary. Students will be notified of the changes in class.

Approximate Schedule – Severe and Hazardous Weather – Spring 2012

Week	Date	Subject	Chapter
1	M, 1/30	Introduction and Properties of the Atmosphere	1
	W, 2/1	Properties of the Atmosphere and Meteorological Measurements	1 & 2
	F, 2/3	Meteorological Measurements	2
2	M, 2/6	Weather Maps	3
	W, 2/8	Atmospheric Stability	6
	F, 2/10	Atmospheric Stability	
3	M, 2/13	Forces and Force Balances	7
	W, 2/15	Forces and Force Balances	
	F, 2/17	The Development of High and Low Pressure Systems	8
4	M, 2/20	The Development of High and Low Pressure Systems	
	W, 2/22	Air Masses and Fronts	9
	F, 2/24	**Exam #1 (Atmospheric Basics)**	
5	M, 2/27	Lake-Effect Snowstorms	13
	W, 2/29	Cold Waves	14
	F, 3/2	Extratropical Cyclones East of the Rockies	10
6	M, 3/5	Extratropical Cyclones East of the Rockies	
	W, 3/7	Extratropical Cyclones Along the East and Gulf Coasts	11
	F, 3/9	Extratropical Cyclones Along the East and Gulf Coasts	
7	M, 3/12	Freezing Precipitation and Ice Storms	12
	W, 3/14	Great Plains Blizzards	15
	F, 3/16	**Exam #2**	
8	M, 3/19	**Spring Break – No Classes!**	
	W, 3/21	**Spring Break – No Classes!**	
	F, 3/23	**Spring Break – No Classes!**	
9	M, 3/26	Thunderstorms	18
	W, 3/28	Thunderstorms	
	F, 3/30	Thunderstorms	
10	M, 4/2	Lightning	21
	W, 4/4	Hailstorms	20
	F, 4/6	Tornadoes	19
11	M, 4/9	Tornadoes	
	W, 4/11	Tornadoes	
	F, 4/13	**Exam #3**	
12	M, 4/16	El Niño and La Niña	23
	W, 4/18	El Niño and La Niña	
	F, 4/20	Floods	25
13	M, 4/23	Floods	
	W, 4/25	Floods	
	F, 4/27	Drought	26
14	M, 4/30	Drought	
	W, 5/2	Heat Waves	27
	F, 5/4	Heat Waves	
15	M, 5/7	Tropical Cyclones	24
	W, 5/9	Tropical Cyclones	
	F, 5/11	Tropical Cyclones	
		Final Exam – Monday, May 14, 10:45 a.m.	