

GEOG 412 – Weather Analysis and Forecasting

Section 001, 3 Credits

Fall 2009

Instructor: Dr. Darren B. Parnell

Office: Henson Hall 157E

Office Hours: MWF 10 – 11 a.m.; Th 9 – 11 a.m. (also by appointment)

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Class Meetings: MWF 1 – 1:50 p.m.; Henson Hall 156

Texts: Tim Vasquez. *Weather Forecasting Handbook*, 5th Edition.

Weather Graphics Technologies, 2001. ISBN 0-9706840-2-9

Tim Vasquez. *Weather Map Handbook*, 2nd Edition.

Weather Graphics Technologies, 2008. ISBN 0-9706840-7-X

Additional Materials: Colored pencils are required daily.

Course Description: This course is designed to introduce students to the basic tools of weather analysis and techniques of weather forecasting. Students will acquire the skills needed to analyze and interpret surface and upper-air observations, data from satellites and radar, atmospheric soundings, and severe weather indices. Students will be introduced to the collection, display, and application of numerical weather forecasts used by the operational meteorologist. The control mechanisms and atmospheric processes associated with various forms of severe weather will also be examined. Upon successful completion of the course, students will be able to make forecasts of temperature, precipitation, and other meteorological conditions.

Prerequisite: GEOG 201 (Weather and Climate) and GEOG 410 (Meteorology)

Exams: This course has four exams and four weather forecasts worth a total of 440 points. Exam questions will come from class lectures and the textbook. Each exam will be administered as scheduled. All exams and weather forecasts count for a portion of the final grade; none can be dropped.

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.

Course Format

	<u>Points</u>	<u>Percent of Final Grade</u>
Exams and weather forecasts	440	46%
In-class exercises / class participation	180	19%
Take-home assignments	300	31%
Forecasting Contest	40	4%

Weather Forecasting Contest: All students in this class are required 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 Wednesday, September 9 and end on Wednesday, December 9. You will earn a total of 40 points for participation (only one forecast can be missed to receive full credit for participation). There will be bonus points given to the top three students in the class.

Grades: This course has a total of 960 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 (960). Letter grades will be assigned as follows:

Letter Grade	Percentage of Points	Total Points
A	90.00 – 100%	864 – 960
B	80.00 – 89.99%	768 – 863
C	70.00 – 79.99%	672 – 767
D	60.00 – 69.99%	576 – 671
F	0.00 – 59.99%	Below 576

Attendance: Attending class is important. Coming to class, paying attention and taking notes is perhaps the best way to learn the course material. 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. **Please silence all electronic devices while in class.** Do not arrive late and do not leave early.

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 2008-2010 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 Fall 2009

Last day to drop/add – Friday, September 4, 2009

Last day to withdraw from course to receive a "W" – Friday, October 30, 2009

Commencement Exercises – Saturday, December 19, 2009

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 – Weather Analysis and Forecasting – Fall 2009

Week	Date	Subject
1	M, 8/31	Introduction to Weather Analysis and Weather Forecasting
	W, 9/2	Observational Elements
	F, 9/4	Text Data and Data Decoding
2	M, 9/7	Labor Day – No Class!
	W, 9/9	Text Data and Data Decoding
	F, 9/11	Text Data and Data Decoding
3	M, 9/14	Surface Map Analysis
	W, 9/16	Surface Map Analysis
	F, 9/18	Surface Map Analysis
4	M, 9/21	850 mb Map Analysis
	W, 9/23	850 mb Map Analysis
	F, 9/25	700 mb Map Analysis
5	M, 9/28	700 mb Map Analysis – Exam Review
	W, 9/30	Exam #1
	F, 10/2	500 mb Map Analysis
6	M, 10/5	500 mb Map Analysis
	W, 10/7	500 mb Map Analysis
	F, 10/9	300/200 mb Map Analysis
7	M, 10/12	300/200 mb Map Analysis
	W, 10/14	Thickness Chart Analysis
	F, 10/16	Other Observational Charts
8	M, 10/19	Satellite Imagery and Interpretation
	W, 10/21	Satellite Imagery and Interpretation
	F, 10/23	No Class! – Professional Conference
9	M, 10/26	Radar Imagery and Interpretation
	W, 10/28	Radar Imagery and Interpretation
	F, 10/30	Exam #2
10	M, 11/2	Skew-T Analysis
	W, 11/4	Skew-T Analysis
	F, 11/6	Skew-T Analysis
11	M, 11/9	Human Forecasts
	W, 11/11	Human Forecasts
	F, 11/13	Numerical Weather Prediction
12	M, 11/16	Numerical Weather Prediction
	W, 11/18	Numerical Weather Prediction
	F, 11/20	Creating a Forecast
13	M, 11/23	Exam #3
	W, 11/25	Thanksgiving Break – No Class!
	F, 11/27	Thanksgiving Break – No Class!
14	M, 11/30	Creating a Forecast
	W, 12/2	Severe Weather Forecasting
	F, 12/4	Severe Weather Forecasting
15	M, 12/7	Severe Weather Forecasting
	W, 12/9	Winter Weather Forecasting
	F, 12/11	Winter Weather Forecasting
		Final Exam – Tuesday, December 15, 10:45 a.m.