

WAYLAND BAPTIST UNIVERSITY
DIVISION OF MATHEMATICS AND SCIENCES

COURSE NUMBER AND TITLE: GEOL 3402 - Meteorology
Campus: Virtual

INSTRUCTOR: Mark Bryan
Email: bryanm@wbu.edu

CATALOG DESCRIPTION: The composition of the atmosphere and the energy transformations which take place in the various atmospheric arenas are discussed in detail. Weather forecasting and climatology are also studied.

PREREQUISITE: none

TEXT BOOK: Weather Studies- Introduction to Atmospheric Science, 3rd ed. by Moran; American Meteorological Society,

LAB BOOK: Weather Studies- Investigation Manual; American Meteorological Society, 2007-2008

THE TEXT BOOK & LAB BOOK ARE PACKAGED TOGETHER. ISBN: 978-1-878220-82-0

LAB KIT: WBU Meteorology Lab Kit

OUTCOME COMPETENCIES: Upon completion of the course the student will

1. know the composition and chemical properties of the atmosphere
2. understand the earth's global heat budget and mechanisms of heat transfer and atmospheric circulation
3. interpret quantitative data relevant to weather forecasting, including air temperature, pressure and humidity readings.
4. understand the physical processes behind the development of clouds, thunderstorms, tornadoes and hurricanes
5. be familiar with concepts of global climates and the effects of human population on the atmosphere.

DISCRIMINATION POLICY: It is university policy that no otherwise qualified disabled person be excluded from participating in, be denied the benefits of, or be subject to discrimination under any educational program or activity in the University.

ATTENDANCE: All class activities should be completed in a timely manner.

*Students who do not complete any labs prior to the end of the first test will automatically fail the course or should drop the course.

*Students who do not pass over half the labs will automatically fail the course.

COURSE REQUIREMENTS: Students will be evaluated by examinations, lab activities, etc. as described in this syllabus under the heading "Evaluation".

Students should have necessary computer skills to complete an online course.

A small software program will be available for download to use when working on maps. Students who cannot install this on the computer they use should be proficient in the use of the Microsoft Paint program.

A small amount of tape, 2 two liter bottles and scissors are needed.

Meteorology

EVALUATION: University Grading System: A=90-100, B=80-89, C=70-79, D=60-69, F=below 60. The final class grade will be based on the average of grades that are earned as listed below.

Tests	3	(200 points each)	600	60%
Discussion	----	(75 points)	75	7.5%
Readings	----	(75 points)	75	7.5%
Labs	10	(25 points each)	<u>250</u>	<u>25%</u>
			1000	100%

Tests: The 3 online tests will have specific dates for completion to be announced. Tests not completed by that date will be graded as 0.

Online forums/discussion: Several questions/discussion topics will be posted during the term. Students are expected to respond to these postings *and* to each other's responses. These topics may be of current events, new discoveries or any variety meteorology related items. Student responses may require some additional reading and extensive thought or may be just asking for their opinion. In addition, the instructor expects emails with questions or other concerns about the class and its activities.

Readings: Several journal articles will be provided which students will read and respond to.

Labs: Except for the first lab, all labs are due on the date listed under DUE DATES, no later than 5:00 p.m., Central Time Zone U.S. Late labs are graded as 0. The first lab may be turned in by the second week deadline. (This is to allow all students ample time to obtain the materials.) Students should plan at least 3 hours per week to complete lab activities. Labs may be completed in advance of the week assigned but should be completed in the order listed. Labs will not be graded before their due date.

COURSE OUTLINE:

Date	week	subject	chapter
Week of	#		
08/18	1	Monitoring weather & The atmosphere	1, 2, 13 (to 372)
08/25	2	Heating the atmosphere	2 & 3
09/01	3	Air temperature & Circulation	4
09/08 Exam 1	4	Air pressure	5
09/15	5	Atmosphere stability & humidity	6
09/22	6	Clouds & Precipitation	7
09/29	7	Atmospheric circulation & Winds	8 & 9
10/06 Exam 2	8	Air masses and fronts	9 & 10
10/13	9	Thunderstorms & Tornadoes	11
10/20	10	Hurricanes & Tropical systems	12
10/27 Exam 3	11	Forecasting & Global Climate	13 (from 372) & 15

EXAM 3 is a proctored exam.

EXAM 1 covers weeks 1-3.

EXAM 2 covers weeks 4-7.

EXAM 3 covers weeks 9-11.

All coursework MUST be completed by **11/01/08**

Notes-

- This is a lab course and students should expect to expend around 10 hrs per week - minimum.
- Communication with the instructor regarding due dates should be done BEFORE items are due.
- Late tests, labs, papers and any other activities will receive a grade of 0.
- This outline and other syllabus items are subject to change at university or instructor discretion.