

PITTSBURG STATE UNIVERSITY, DEPARTMENT OF PHYSICS

Course Title: PHYS 167- _____ Introduction to Meteorology Lab
Term: Fall 2018
Meeting Times and Locations: _____ Yates Room 400
Text: *Exercises for Weather and Climate*,
Greg Carbone, 9th Edition, Prentice Hall 2010

Instructor: Angelyn Hobson **Office Location:** 305 Yates
Instructor Email: ahobson@pittstate.edu **Office Hours:** Monday (10:00am-2:00pm),
Tuesday/Thursday (10:45am-12:00pm),
Wednesday (10:00am-12:00pm)

This on campus face-to-face course counts toward the requirements in General Education for your degree program. General Education is an important part of your educational program at Pittsburg State University and has been designed to implement the following philosophy: **Philosophy of General Education: General education is the study of humans in their global setting. The general education curriculum, therefore, acts as the heart of a university education by developing the capacities that typify the educated person and providing a basis for life-long learning and intellectual, ethical, and aesthetic fulfillment. General education examines the world around us and fosters an understanding of our interactions with the world and our place in the universe. General education celebrates the creative capacities of humankind and helps to preserve and transmit to future generations the values, knowledge, wisdom, and sense of history that are our common heritage.**

This course will help you accomplish several of the Goals and Objectives of General Education including the development of your ability to use the tools of mathematics to communicate and to formulate and solve problems and the development of your critical thinking skills. Upon completion of this course, you should be able to: 1. Perform measurements using physical apparatus. 2. Analyze the collected data including appropriate treatment of errors and uncertainties. 3. Generate and communicate conclusions based on the data and analysis for experimental investigations

COURSE DESCRIPTION AND PREREQUISITES

Course Description: Exercises, activities, and experiments to accompany the PHYS 166 Meteorology lecture. A brief lecture will introduce the laboratory.
Co-requisite: This lecture class is independent of the lecture, PHYS 166-01, which meets in Grubbs Room 307.

INSTRUCTIONAL RESOURCES

You will need a *pencil* and a *calculator* (not a cell phone calculator) for this class. The labs will be directly out of the lab manual. **You must wear closed-toe shoes that entirely cover the sides, top, and back of your feet while in the lab. No sandals, clogs, flats, bedroom slippers, or flip-flops are allowed. You will be sent home if you are not wearing appropriate footwear.** No food is allowed in the lab. No cell phone texting is allowed in the lab.

MAKE-UP LABS

There will be **no** make-up labs. **You must attend the lab section in which you are enrolled to earn attendance points. You will not be awarded attendance points for a lab that you do not attend.**

GRADES

Grades will be based on exams, quizzes, and attendance. Points will be deducted if you arrive late to the lab or leave the lab early. Grades will be determined from the following:

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|--------------------|----------------------------|
| Attendance: | 12 @ 10 points each |
| Lab Tests: | 2 @ 30 points each |
| Quizzes: | 2 @ 10 points each |

GRADING SCALE

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|------------------|----------|
| 180-200 | A |
| 160-179 | B |
| 140-159 | C |
| 120-139 | D |
| Below 120 | F |

TENTATIVE DATES

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| 8/21-8/23 | WE WILL NOT MEET THIS FIRST WEEK |
| 8/28-8/30 | Lab 1: Vertical Structure of the Atmosphere |

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| 9/4-9/6 | Lab 2: Earth-Sun Geometry |
| 9/11-9/13 | Lab 3: The Surface Energy Budget and Lab 4: The Global Energy Budget |
| 9/18-9/20 | Lab 5: Atmospheric Moisture, QUIZ 1 |
| 9/25-9/27 | Lab 6: Saturation and Atmospheric Stability |
| 10/2-10/4 | EXAM 1 |

NO LABS DURING WEEK OF OCTOBER 8 DUE TO FALL BREAK

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| 10/16-10/18 | Lab 7: Cloud Droplets and Raindrops |
| 10/23-10/25 | Lab 8: Atmospheric Motion |
| 10/30-11/1 | Lab 9: Weather Map Analysis |
| 11/6-11/8 | Lab 10: Mid-Latitude Cyclones |
| 11/13-11/15 | Lab 12: Thunderstorms and Tornadoes, QUIZ 2 |

NO LABS DURING WEEK OF NOVEMBER 19 DUE TO THANKSGIVING BREAK

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| 11/27-11/29 | Lab 13: Hurricanes |
| 12/4-12/6 | EXAM 2 *NOTE THAT THIS IS DURING DEAD WEEK – LAB WILL NOT MEET DURING FINALS WEEK |

Goals of General Education for this Course: This course will help you to accomplish some of the Goals and Objectives of General Education, including the development of your ability to use the tools of mathematics to communicate and to formulate and solve problems, (1.3), to distinguish between relevant and irrelevant information in problem solving, (2.1), to articulate a problem and develop a logical and reasonable response to it using appropriate resources, (2.2), to apply generalizations, principles, theories, or rules to the real world, (2.3) to analyze and synthesize information, (2.4), and to understand the basic principles, facts, theories, methods, analysis, and description in the physical sciences, (4.1 and 4.2), and how they contribute to the general welfare, (4i.3); to evaluate the impact of scientific, technological, economic, and intellectual change on social and political institutions, (4ii.2), on individuals, social structures, the economy and the world (4iv.1), and to articulate possible solutions to the problems that arise from the same, (4iv.2).

Goals of General Education for this course are below.

Goal 1: Students should be able to communicate effectively.

3. Demonstrate the ability to formulate and solve problems using the tools of mathematics.

Goal 2: Students should be able to think critically.

1. Demonstrate the ability to distinguish between relevant and irrelevant information in problem solving.
2. Articulate a problem and develop a logical and reasonable response to it using appropriate sources.
3. Apply generalizations, principles, theories, or rules to the real world.
4. Demonstrate the ability to analyze and synthesize information.

Goal 4: Students should be able to function responsibly in the world in which they live.

Part I: Science

Demonstrate understanding of basic principles, facts, and theories of the biological and physical sciences.

Demonstrate understanding of the basic methods of inquiry, analysis, and description in the biological and physical sciences.

Demonstrate an understanding of how the natural sciences contribute to the general welfare of civilization.

Part II: Social

Evaluate the impact of scientific, technological, economic, and intellectual change on social and political institutions.

Link for Syllabus Supplement:

https://www.pittstate.edu/registrar/_files/documents/syllabus-supplement-fall-2018