

PHYSICAL SCIENCE LABORATORY, PHYS 172

Your Instructor: _____ Lab Section: 172- _____ Course Time: _____ Course Day: _____

Office Phone: 235-4292 or 235-4392 Office: 304 or 305 Yates Hall

e-mail: kscarborough@pittstate.edu or

Office Hours: See below.

No Canvas messaging. ahobson@pittstate.edu

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

I. COURSE DESCRIPTION: This course is designed to provide the student with laboratory experiences in mechanics, electricity and magnetism, and Earth and Space science.

II. PURPOSE OF THE COURSE: The purpose of this course is to meet the needs of those students who are required to have a Physical Science laboratory experience.

III. COURSE OBJECTIVES: Some objectives of this course are to expose students to laboratory equipment, to help them develop laboratory skills such as careful data collecting, graphing, and appropriate analyzing of experimental results, and to reinforce the Physical Science concepts developed in the lecture. You should attain some degree of mastery in using the scientific method, graphing data, using math as a tool, unit conversions, and problem solving.

IV. INSTRUCTIONAL RESOURCES: You will need a folder or notebook, paper, a pencil, and a **calculator (not a smart phone or iPad/AppleWatch/iPod-type calculator)** for this class. **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.**

V. TEACHING STRATEGIES: Generally, an initial brief lecture introduces the laboratory. Careful note taking while performing each lab will be required.

VI. EVALUATION: YOUR GRADE IN THIS CLASS IS DETERMINED BY THE TOTAL NUMBER OF POINTS THAT YOU HAVE.

1. *Attendance & Participation	12 @ 10 points each	120 points
2. 2 Lab Tests	2 @ 30 points each	60 points
3. 2 Quizzes	2 @ 10 points each	20 points
	Total Points	200 points

***You will not be awarded the full amount of attendance points if you do not fully-participate in lab (including doing ALL of your own calculations), if you arrive to lab late, leave lab early, do not have a calculator with you, use your phone during class, do not follow directions, or if you are sent home because you arrived wearing inappropriate footwear.**

GRADING SCALE**180-200 POINTS A****160-179 POINTS B****140-159 POINTS C****120-139 POINTS D****Below 120 POINTS F**

VIII. MAKE-UP LABS: Missed labs may not be made up. You must attend the lab section in which you are enrolled to earn attendance points. You will never be awarded attendance points for a lab that you do not attend.

Regarding labs missed, it is your responsibility to obtain the experimental results from lab partners and to acquire appropriate understanding of the material.

IX. MISCELLANEOUS: It is strongly recommended that you keep your notebook or folder current. **The lab notebook may be used when you take the lab tests.** Please record any apparatus, data, blackboard notes, procedures, etc. in your notebook directly.

VII. TENTATIVE SCHEDULE

8/28-8/30 Lab 1: Metric System
 9/4-9/6 Lab 2: Acceleration of Gravity
9/11-9/13 Lab 3: Work, Power, and Machines, **QUIZ 1**
 9/18-9/20 Lab 4: Simple Circuits/Motors, Generators, Transformers
 9/25-9/27 Lab 5: Waves/Speed of Sound

10/2-10/4 TEST 1

NO LABS DURING THE WEEK OF OCTOBER 8TH DUE TO FALL BREAK.

10/16-10/18 Lab 6: Model Motor Construction
 10/23-10/25 Lab 7: Chemical Analysis *(Must wear long pants that **totally** cover your legs.)*
 10/30-11/1 Lab 8: Radioactivity
 11/6-11/8 Lab 9: Weather

11/13-11/15 Lab 10: Earthquakes & Lab 11: Parallax, QUIZ 2

NO LABS DURING WEEK OF NOVEMBER 19TH DUE TO THANKSGIVING BREAK

11/27-11/29 Lab 12: Rocks and Minerals *(Must wear long pants that **totally** cover your legs.)*

12/4-12/6

TEST 2 *NOTE THAT THIS IS DURING DEAD WEEK.*

THERE IS NO LAB ACTIVITY DURING FINALS' WEEK—LAB IS OVER.

Tentative Office Schedule--Kyla Scarborough Fall 2018

	Monday	Tuesday	Wednesday	Thursday	Friday
9:00-9:50	Lunch	Lunch	Lunch	Lunch	Lunch
10:00-10:50	Physical Science	Astro Lab Set-up	Physical Science	Office Hours	Physical Science
11:00-11:50	Office Hours	Office Hours	Office Hours	Office Hours	Office Hours
12:00-12:50	Astro Lab Set-up	PS Lab		PS Lab	Faculty Meeting
1:00-1:50	Descriptive Astronomy	PS Lab	Descriptive Astronomy	PS Lab	Descriptive Astronomy
2:00-2:50	Astro. Lab	Astro. Lab	Astro. Lab	Astro. Lab	PS Lab Set-up
3:00-3:50	Astro. Lab	Astro. Lab	Astro. Lab	Astro. Lab	PS Lab Set-up

The overall purpose of the General Education program is to provide an environment in which students can acquire the basic knowledge and skills common to educated people in our global society. To do this, the program provides instruction in certain basic disciplines ranging from the arts to science and technology. But it does more. It stimulates critical thinking and encourages decision-making free from prejudice or insularity. It develops the ability to communicate effectively via a variety of means. The program promotes ethical and aesthetic growth. It cultivates an appreciation of different cultures and the rights of others. In short, the foundation provided by General Education helps Pittsburg State University graduates lead satisfying lives and function responsibly in a complex and ever-changing world. And above all, the program provides a basis for future growth.

Goals of General Education for this Course are below.

Goal #1: Students should be able to communicate effectively.

OBJECTIVES:

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

Goal #2: Students should be able to think critically.

OBJECTIVES:

Demonstrate the ability to distinguish between relevant and irrelevant information in problem solving.

Articulate a problem and develop a logical and reasonable response to it using appropriate sources.

Apply generalizations, principles, theories, or rules to the real world.

Demonstrate the ability to analyze and synthesize information.

Goal #3: Students should be able to function responsibly in the world in which they live.

OBJECTIVES:

Part I: Sciences

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

Demonstrate an 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 Studies

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

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