

PS 109L §104 (CRN 3847) 2014 Fall Syllabus (Physical Science I Lab)

Course-Section Web Site: www.science.marshall.edu/foltzc/p109L14.htm

Class meets ___R_ 1:00pm-2:50pm in Science 179, from Aug.29 - Dec.05 (Exam 2)

Attendance at each lab meeting is required; you must do the lab work before reporting on it!

If you expect to miss a lab, contact me early so we might slip you into a different T/R section. (make-up opportunities might be possible on Friday/Saturday, but don't count on it)

Instructor: Dr. Curt Foltz ; Science 159 ; foltzc@marshall.edu ; (304) 696-2519

office hours: MTW_F 12:30-2:00pm ; M_W__ 3:30-5:30pm ; other times by app't or chance

Catalog Course Description: PS 109L General Physical Science Laboratory. 1 hr

A laboratory course with experiments related to PS 109. 2 hrs. lab (CR: PS 109)

This lab course emphasizes physical concepts and measurement techniques, not analysis; it is geared for Elementary Education majors and others wanting a Core II Natural Science survey. (for more math but slower pace with more depth, consider the Phy.201 - Phy.204 sequence)

Required: workbook: Physical Science 109 Laboratory Manual by Bady, 2014 ed.

calculator : non-programmable, with +, -, ×, ÷ buttons ... x^2 and \sqrt{x} , and EE/EXP might help
cheap semicircle protractor with center-hole (not a swivel-stick) to measure star altitudes with
magnetic compass for measuring azimuth directions

attendance: (with pen, pencil, calculator, Lab workbook) at each class meeting, ready to learn
time & effort: outside of class, about 2 effective hours/week to complete assignments

Recommended: notebook with lined pages ... easier to use than plain blank printer paper.

a positive attitude ... we're trying to embed these concepts deeply, not waste your time.

preparation ... many labs will be done before that Topic is covered in Lecture.

cooperation with lab partners ... best way to learn is to teach, best instruction is by peers.

balance ... between struggling to understand (yourself) , and asking when you don't.

Overview: PS 109 Lab runs very fast through mechanical systems, thermal phenomena, electric circuits and light. You will observe the Sun, the Moon, and Stars for this Lab outside class-time (on your own or with a partner) - you'll need to do this in fairly clear weather! These activities illustrate things that a grade-school teacher might be expected to do with their classes. They explore the base Topics in the PS 109 Lecture course, and intend to show the how the numbers and units, measured by hand, relate to the words and symbols (equations) in a science book. Almost none of the important quantities are measured directly - we need to compute each one from a few separately-measured factors. This shows us explicitly how those factors contribute. ("important" quantities follow simple rules, even if some of their formulas are complicated.) Most activities can be done at your lab table (with a partner - we will typically work in pairs). For other activities you'll need to take turns at stations on countertops around the room edge. Always watch the details of your partners' activity with a skeptical attitude, to avoid blunders; if 2 partners measure the same thing and get 2 different results, it is likely that one fooged up.

PS109L Lab Schedule - Fall 2014

- Work in pairs, but make sure you both know how to do every aspect – Exams will be done solo!
- When finished, pick up a Report Sheet – this is what you will turn in for grading.
Report Sheets are to be done by yourself (not with your lab partner).
- Lab Report Sheets (and Astronomy Sheets) are to be turned in to the drop boxes outside S179.
Report sheets are due 2pm Friday of that week ... accepted late until 5pm Monday
- Late Report Sheets will suffer a 20% penalty ... NO labs will be accepted after 5 pm Monday
- Pick up your graded Report Sheet as you enter next week; check it against the key at the front.

Dates	Lab	Other Assigned Work
Aug. 26/28	Lab 1: Motion	Sun observation #1 - due with Lab 2
Sep. 02/04	Lab 2: Force	Night Sky #1 - due with Lab 3
Sep. 09/11	Lab 3: Energy	None
Sep. 16/18	Lab 4: Heat	None
Sep. 23/25	Lab 5: Fluids & Pressure	Begin Moon Phase Calendar
Sep. 30/02	Prep for Exam 1	continue Moon Phases
Oct. 07/09	Exam 1 on Labs 1 - 5, Sun #1, Sky #1 (daily motion)	
Oct. 14/16	Lab 6: Electricity	continue Moon Phases
Oct. 21/23	Lab 7: Waves	Finish Moon Phases - due with Lab 8
Oct. 28/30	Lab 8: Light	CyberSky exploration - due with Lab 9
Nov. 04/06	Lab 9: Moon Phases & Eclipses	Sun observation #2 - due with Lab 10
Nov. 11/13	Lab 10: Seasons	Night Sky observation #2- due Nov.18/20
Nov. 18/20	Prep for Exam 2	None
Nov. 25/27	Thanksgiving	Break
Dec. 02/04	Exam 2 on Labs 6 - 10, Moon, Sun #2, Sky #2, CyberSky (yearly motion)	

Grade Components: 10 Lab Report Sheets × 10 points each = 38½ %
 6 Astronomy Sheets × 5 points each = 11½ %
 2 Lab Exams × 25 % each = 50 %

Department policy requires 2 Lab Exams; nothing on the Exams is to be discussed with others, including the hands-on “practical” portion (about ⅓ of each Exam).

Letter Scale: 100% > A > 90% > B > 80% > C > 70% > D > 60% > F ...

with the additional condition that you must pass (>60%) at least 1 Exam to pass the course.

Statements that are valid for ALL Classes at Marshall:

These are printed in your MU catalog – see www.marshall.edu/wpmu/academic-affairs/?page_id=802/

+ Academic Dishonesty Policy: progress in science is founded on honesty and openness
 – no lying, no cheating, no stealing, no copying – zero tolerance!

+ Cell Phones and other networked devices may not be used except by instructor’s invitation.