

Hagerstown Community College
MASTER SYLLABUS DOCUMENT

COURSE: PHY 201, General Physics 1, 4 credits, Semester offered: Fall, Summer

COURSE DESCRIPTION: *General Physics 1, *This course includes a laboratory component.*
This course is the first semester of a two-semester sequence of algebra/trigonometry based Physics with laboratory for biology, pre-professional, and liberal arts students. Topics include mechanics, material properties, fluid mechanics, thermodynamics, waves, and sound. 45 hours of lecture, 45 hours of lab. A laboratory fee is required. *Prerequisite: MAT 161 or MAT 102 or MAT 102 concurrently.

TEXTBOOK: *College Physics*, OpenStax College ISBN-10: 1938168003, ISBN-13: 978-1-938168-00-0

LAB MANUAL: *Physics Laboratory Investigations for PHY-201* by Paul Jozik, available in HCC Bookstore

STUDENT LEARNING OUTCOMES:

At the end of this course, students will

1. Use mathematical models as a medium for quantitative reasoning and describing physical reality.
2. Use graphical models to analyze laboratory data.
3. Apply the classical conservation laws as a basis of deriving and understanding physics principles.
4. Describe physics concepts verbally, graphically, and mathematically
5. Solve problems individually and collaboratively
6. Use software to analyze physics experiments
7. Access, process, analyze and synthesize scientific information.

COURSE CONTENT OBJECTIVES:

1. To learn basic principles of physics through experiments and exercises. The lab sessions will be used to introduce, reinforce, and/or enrich the treatment of related topics studied in the lecture portion of this course.
2. To learn the proper use of various kinds of laboratory equipment.
3. To learn how data can be collected, presented, and interpreted in a clear and orderly manner.
4. To learn problem solving skills related to physics principles and interpretation of laboratory data.
5. To determine error in laboratory measurements and techniques used to minimize such error.
6. To learn how to function as a member of a lab group, respecting and assisting all fellow members of the group. In order for each student to derive the greatest benefit from this course it is necessary for each student to:
 - a. be an active participant in each part of all lab exercises: set up, measurement, clean up, etc.
 - b. record all data being collected in an organized manner
 - c. perform each calculation related to the laboratory activity

TOTAL HOURS OF COURSEWORK:

For most classes, students should expect to do at least 2 hours of coursework outside of class for each hour of in-class coursework. College students are expected to spend as much time as needed in productive work to produce success, that amount of time varies greatly from student to student.

Minimum Clock Hours Required for this Course

Component of Course	Hours In Class or Lab	Hours Outside of Class	Total Hours/Semester Outside of Class
Lecture (<i>includes testing</i>)	37.5 hours	2 hours per lecture	60 hours/semester
Exams	6.5 hours	10 hours per exam	40 hours/semester
Laboratory (<i>includes testing</i>)	37.5 hours	2.5 hour per lab	30 hours per semester
Laboratory Exams	5 hours	10 hours per lab exam	20 hours per semester
Total	75 hours		150 hours

SERVICES FOR STUDENTS WITH DISABILITIES: Students may receive reasonable accommodations if they have a diagnosed disability and present appropriate documentation. Students seeking accommodations are required to contact the Disability Support Services (DSS) office as early as possible. Students may contact a DSS staff member for an appointment at dss@hagerstowncc.edu or at 240-500-2530.