

**Montgomery College – Rockville Campus
Physical Sciences Department
PHYS 204 – General Physics for Non-Engineers II**

SYLLABUS – Spring 2019 Semester

Instructor: Dr. Corey Stambaugh Office: --- Email: corey.stambaugh@montgomerycollege.edu Phone: (Dept.) 240-567-5230	Lecture (32112) T/Th 6:00 – 07:15 PM (SC409) Discussion (32113) T 7:20 – 08:10 PM (SC409) Laboratory (32114) Th 7:20 – 10:00 PM (SC409)
Exam Date: Tuesdays 2/19, 3/19, 4/16 FINAL EXAM: Thursday May 9 th 7:15-9:15 PM	Office Hours: T 8:20 PM – 9:00 PM or by appointment
Course Textbook: College Physics, 9 th Edition by Raymond Serway and Chris Vuille Cengage Learning, ISBN: 978-0-8400-6206-2	

Course Description (See Class Catalog)

Second of two related courses (with PHYS 203, which must be taken first). Fundamental concepts and laws of physics with emphasis on principles and development of scientific methods applied to physical relationships. Less emphasis is placed on mathematics than in PHYS 161-262-263, and concurrent enrollment in calculus courses is, therefore, not required. This course includes topics such as mechanics, heat, sound, electricity and magnetism, light, and modern physics. (NSLD) PREREQUISITE: PHYS 203 or consent of department. Three hours lecture, four hours laboratory/discussion each week.

General Education:

PHYS 204 fulfills a General Education Program Natural Sciences Distribution with Laboratory requirement.

Montgomery College's General Education Program is designed to ensure that students have the skills, knowledge and attitudes to carry them successfully through their work and personal lives. This course provides multiple opportunities to develop two or more of the following competencies: written and oral communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competency, and information literacy. For more information, please see www.montgomerycollege.edu/gened.

Grading:

Exams (10%/each):	30%
Homework:	10%
Quizzes:	10%
Labs (20% Report + 5% Final):	25%
Participation:	5%
Final:	20%

The Final Grade for this course will be assigned based on the following scales: (A ≥ 90%), (B ≥ 80%), (C ≥ 70%), (D ≥ 60%), and (F < 60%)

Exams: **Thursdays:** Feb. 19th, March. 19th, April. 16th

Final Exam: Thursday, May 9th, 2018 7:15 PM – 9:15 PM

Guidelines:

1. Makeup tests are not given under any circumstances.
2. Assignments must be submitted by the due date to receive credit. **No exceptions!**
January 28th, 2019: Last day to drop with a refund.
3. **February 11th, 2018:** Last day to drop a class without a grade, change from credit to audit, or change from audit to credit. Audit to credit and credit to audit changes require instructor's signature. Please see me before you make this change.
4. **April 15th, 2018:** Last day to drop the class with a grade of **W**.

Course Outcomes

At the end of our course you will be able to:

- LO1.** Identify what physical principles are at play and what laws guide the outcomes.
- LO2.** Explain and analyze key concepts related to different kinds of motion of various systems.
- LO3.** Apply basic physical principles to solve practical problems.
- LO4.** Develop independent habits of learning new scientific concepts.
- LO5.** Set up and carry on a solution to complex, multi-step problems based on the physical principles at play.
- LO6.** Learn to communicate scientific concepts to diverse audience.
- LO7.** Learn what the base units of the SI are, and how those related to this course are realized.

Keys to Success

1. Prepare for each class. That means read the material to be covered before the start of class.
2. Work as many problems as possible, both before they are covered and after. This way when we discuss the physics within the class setting, you will be able to focus on and ask about the material that presented challenges.
3. Always check your units.
4. Ask questions (in class, after class or by e-mail).

Homework: Homework will be assigned once a week (Sunday), assignments are due at the beginning of class on Thursday (following).

All work should be shown on homework to receive full credit. This means writing just the answer is **not** enough. You must show steps like, a diagram, the equations used, how you got to the final equation if steps were required, the values inserted and steps to derive the values when needed. Your final answer must include units, if applicable. If the answer is a vector, both magnitude and direction are required as well. Work must be neat and legible.

Quizzes: Quizzes will take place on Thursday and will cover material from the previous class and the upcoming lab.

Exams: Exams are part multiple choice and part written. An opportunity will be given after each exam to correct mistakes for additional partial credit on the exam. Details will be given after each exam. Attendance at all exams is mandatory, no make-ups are allotted, please check schedule.

Laboratory: Labs are due before the following weeks lab. They should be written up cleaning. The required format will be discussed during the first lab. Points will be deducted for reports that are not written neatly, are missing units, etc.

Participation:

1. Show up to class, on time.
2. Answer weekly question/prompt on black board (on-time).
3. Participate in class activities.

Cell Phones and Technology: Cell phones are to be silenced and put away during class. Repeated violation will result in loss of participation points.

Emergency food, nutrition programs and housing assistance

Any student who has difficulty accessing sufficient food to eat every day, or who lacks a safe and stable place to live, is urged to contact the Dean of Students Affairs on your campus. Furthermore, please notify the professor if you are comfortable in doing so. This will enable the professor to provide any resources that they may possess. We know this can affect performance in the course and Montgomery College is committed to your success. The Deans of Student Affairs are: Dr. Jamin Bartolomeo (GT), Dr. Tanya R. Mason (RV), and Dr. Clemmie Solomon (TPSS). <http://cms.montgomerycollege.edu/edu/secondary5.aspx?urlid=55>

Important Student Information Link

In addition to course requirements and objectives that are in this syllabus, Montgomery College has information on its web site (see link below) to assist you in having a successful experience both inside and outside of the classroom. It is important that you read and understand this information. The **link below provides** information and other resources to areas that pertain to the following: student behavior (student code of conduct), student e-mail, the tobacco free policy, withdraw and refund dates, disability support services, veteran services, how to access information on delayed openings and closings, how to register for the Montgomery College alert System, and finally, how closings and delays can impact your classes. If you have any questions please bring them to your professor. As rules and regulations change they will be updated and you will be able to access them through the link. If any student would like a written copy of these policies and procedures, the professor would be happy to provide them. By registering for this class and staying in this class, you are indicating that you acknowledge and accept these policies.

<http://cms.montgomerycollege.edu/mcsyllabus/>

Montgomery College Rockville

Spring 2019

Physics 204 Chapter/Laboratory Schedule (subject to change)

Date			Chapter	Topics	Laboratory	
01/22	&	01/24	15	Electric Forces & Electric Fields	Electrostatics	
01/29	&	01/31	16	Electrical Energy & Capacitance	Electric Fields	
02/05	&	02/07	17	Current & Resistance	Introduction to Electrical Measurements	
02/12	&	02/14	18	Direct Current (DC) Circuits	Resistors in Series and Parallel	
02/19	&	02/21	19	Magnetism	e/m Ratio	Exam #1 on 2/19
02/26	&	02/28	20	Induced Voltages & Inductance	EM Induction	
03/05	&	03/07	21	Alternating Current (AC) Circuits & Electromagnetic Waves	Oscilloscope and Function Generator & RCL Circuits	
03/12	&	03/14		Spring Break	No Class	
03/19	&	03/21	22	Reflection & Refraction of Light	Survey of Optical Phenomena	Exam #2 on 3/19
03/26	&	03/28	23	Mirrors and Lenses	Mirrors and Lenses	
04/02	&	04/04	24/25	Wave Optics / Optical Instruments	Interference and Diffraction	
04/09	&	04/11	27	Quantum Physics	Polarization of Light	
04/16	&	04/18	28	Atomic Physics	Spectroscopy	Exam #3 on 4/16
04/23	&	04/25	29/30	Nuclear Energy	Geiger Counter and Detection of Radiation	
04/30	&	05/02	26	Relativity	Review / Lab Final	
05/07	&	05/09		Final Exam	Final Exam Date Subject To Change	Final on 5/9
The exact schedule of topics may shift as semester progresses.						