

PHYS 203: General Physics II(with lab)

General Information:

Term: 2021 Summer Session	
Instructor: Staff	
Language of Instruction: English	
Classroom: TBA	
Office Hours: TBA	
Class Sessions Per Week: 5	Lab Sessions Per week: 2
Total Weeks: 5	Total Weeks: 5
Total Class Sessions: 25	Total Laboratory Sessions: 10
Class Session Length (minutes): 145	Lab Session Length (minutes): 145
Credit Hours: 5	

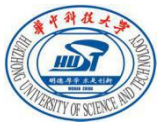
Course Description:

This course is based on the study of General Physics 1 (with lab), which is aiming at helping students develop a comprehensive understanding in the field of General Physics, through theory study and hand-on lab experience. It will introduce basic concepts, theory, and applications of electromagnetism (electrostatics, circuits, magnetism, waves), optics (light, geometric optics, physical optics), and quantum physics. Solid master on concepts acquired in PHYS 103, including: position, velocity, acceleration, force, Newton's laws of motion, work and energy, will facilitate your learning in this PHYS 203. Moreover, the 10 lab sessions will enhance your understanding to relevant physic problems.

Prerequisite: PHYS 103 General Physics I.

Course Format and Requirements:

This class is in the format of lectures and lab sessions. Attendance is vital to get a thorough understanding of the material. Students are responsible for lecture notes, any course material handed out, and attendance in class, while attendance will not to be formally



recorded.

Labs:

The goal of the labs is to provide a hands-on experience with General Physics material and to enhance abilities in scientific methodology, critical thinking, and communicating about General Physics. Attendance is mandatory. No make-up labs will be provided.

Course Materials:

Fundamentals of Physics, David Halliday, Robert Resnick, Jearl Walker, 10th edition.

Course Assignments:

HOMEWORK

There will be 6 homework assignments randomly assigned through the whole semester. Each homework assignment will be assigned the same weight for grading purpose. Homework is due within the first 10 minutes of the start of class on the due date. No late HWs will be accepted.

QUIZZES AND EXAMS

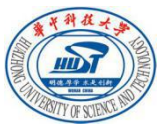
We will have 6 quizzes and 3 exams (2 midterms, 1 Final Exam) during the term.

Quizzes will be **dropped one lowest** score. Quizzes will always be completed in the first 20- minutes of lecture. The quiz problems will be similar to homework problems and in-class examples. There will be no make-up quizzes.

Two Midterm Exams will be based on concepts covered in class. It will be in-class, close-book and non-cumulative. Make-up midterm exams **ONLY** accept by a valid document from a doctor.

Final Exam will be cumulative and close-book. The Final Exam will be based on the homework, textbook, and lectures. A formula sheet will be provided with the exam. Students will need to bring a calculator to all exams.

Note: The Final Exam will not be taken during the normal class times. Exact time and location for final will be announced later.



LAB ASSIGNMENTS

There will be approximately 10 laboratory experimental. Reports will be required for this course. Laboratory grades will be based on the submitted, individually prepared, lab reports, performance of practice exercises, participation and final presentation. Laboratory reports are due at the beginning of the next scheduled formal lab. Late lab report submissions will not be accepted. A style sheet for lab report requirements will be given by the instructor in class. Students must read the lab handouts and be familiar with the intention and basics of the experiment prior to performing the lab. Students missing 3 or more labs, whether excused or unexcused, will receive an F grade for the course.

Course Assessment:

Quizzes	10%
Homework	5%
Labs	20%
Midterm Exams 1	20%
Midterm Exams 2	20%
Final Exam	25%
Total	100%

Grading Scale (percentage):

A+: 98%-100%

A: 93%-97%

A-: 90%-92%

B+: 88%-89%

B: 83%-87%

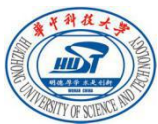
B-: 80%-82%

C+: 78%-79%

C: 73%-77%

C-: 70%-72%

D+: 68%-69%



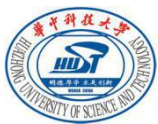
D: 63%-67%

D-: 60%-62%

F: Below 60%

Course Schedule:

Week	Topic	Activities
1	<ul style="list-style-type: none">• Introduction to course and syllabus• Electric Fields• Gauss' Law• Electric Potential• Capacitance	Homework 1 Quiz 1
2	<ul style="list-style-type: none">• Current and Resistance• Circuits: Analyze ac circuits for currents, potentials, and phases• Magnetic Fields• Magnetic Fields due to Currents	Homework 2 Quiz2 Midterm 1
3	<ul style="list-style-type: none">• Magnetic Fields due to Currents (Cont.)• Induction and Inductance• Maxwell's Equations; Magnetism of Matter	Homework 3& 4 Quiz 3 & 4
4	<ul style="list-style-type: none">• Electromagnetic Waves• Images• Interference and The Wave Nature of Light	Homework 5 Quiz5 Midterm2
5	<ul style="list-style-type: none">• Diffraction• The reflection of light: Mirrors; Lenses and Optical Instruments	Homework 6 Quiz6



	<ul style="list-style-type: none"> • Review for Final 	Final Exam
--	---	------------

Lab Schedule:

Lab 1: Electrostatic Force

Lab 2: Equipotential Surfaces and Electric Fields

Lab 3: Voltage, Current and Resistance

Lab 4: Capacitance

Lab 5: RCL Circuit; Current Balance

Lab 6: Magnetic Fields and Current

Lab 7: Refraction

Lab 8: Lenses and Lens Systems

Lab 9: interference

Lab 10: Diffraction and the Spectrometer

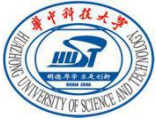
Lab Final Presentation**Academic Integrity:**

Students are encouraged to study together, and to discuss lecture topics with one another, but all other work should be completed independently.

Students are expected to adhere to the standards of academic honesty and integrity that are described in the Huazhong University of Science & Technology's *Academic Conduct Code*. Any work suspected of violating the standards of the *Academic Conduct Code* will be reported to the Dean's Office. Penalties for violating the *Academic Conduct Code* may include dismissal from the program. All students have an individual responsibility to know and understand the provisions of the *Academic Conduct Code*.

Special Needs or Assistance:

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have



learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.