



**Division of Natural Sciences and Horticulture
Physics Department**

<http://learning.hccs.edu/programs/physics>

PHYS 2126: University Physics Laboratory II | Lab | #10704

From 3/30/2020 Online Lab

3 Credit Hours | 48 hours per semester

The changes made in this syllabus compared to the old are in red text.

Instructor Contact Information

Instructor: Aqiang Guo, Ph.D.

HCC Email: aqiang.guo@hccs.edu

Virtual Office Hours: Tuesday and Thursday 1:00-4:00 p.m.

Syllabus change:

Due to the coronavirus pandemic, this class will be changed to an online delivery format according to Houston Community College policy, active Monday, March 30, 2020. The rules in the previous syllabus should be followed until March 30, 2020.

Communication Methods:

- 1. Canvas Inbox and Email**
2. Canvas Announcements
3. Canvas Discussion
4. HCC Email

Please feel free to contact me concerning any problems that you are experiencing in this course. Your performance in my class is very important to me. I am available to hear the concerns and just to discuss course topics.

Instructor's Preferred Method of Contact

Students **must** use their HCCS.edu email or Canvas for communication. I will not respond to any other form of email like Gmail. The preferred contact is through **Canvas Inbox and Email**. You may use other Canvas communication tools like Announcement and discussion. **Please check Canvas Announcement and your HCC email regularly** as you are responsible for understanding the content of messages. Please allow sufficient time for a response. I

will respond to emails within 24 hours Monday through Friday. I will reply to weekend messages on Monday mornings.

What's Exciting About This Course

Physics is the study of the entire universe and everything in it, from the smallest subatomic particles to enormous objects such as planets, stars and even entire galaxies. Physics is how we describe the motion of objects, topics such as electricity, magnetism and light and study energy in its various forms (for example, mechanical or thermal). It is amazing that the universe works in a way that we, as curious human beings, can describe, explain and even predict how phenomena occur in the world around us. Certainly, this sounds exciting to me and hopefully to you as well!

My Personal Welcome

Welcome to University Physics Laboratory II (PHYS 2126)—I'm delighted that you have chosen this course! One of my passions is to know as much as I can about physics, and I can hardly wait to pass that on to you. I will present the information in the most exciting way I know, so that you can grasp the concepts and apply them throughout your entire life.

As you read and wrestle with new ideas and facts that may challenge you, I am available to support you. The fastest way to reach me is by my HCC email. The best way to really discuss issues is in person during posted office hours. My goal is for you to walk out of the course with a better understanding of physics, and a greater appreciation for the complexity of the natural phenomena surrounding us every day, so please don't hesitate to contact me or talk to me in person.

Prerequisites and/or Co-Requisites

PHYS 2126 requires college-level reading, writing and math skills. You are most likely to succeed if you have already taken or are currently taking PHYS 2326. If you have enrolled in this course having satisfied this prerequisite, you have a higher chance of success than students who have not done so. Please carefully read and consider the repeater policy in the [HCCS Student Handbook](#).

Canvas Learning Management System

This section of **PHYS 2126** will use [Canvas](https://eagleonline.hccs.edu) (<https://eagleonline.hccs.edu>) to supplement detail grading recodes, and all the course materials. The course information and course materials on Canvas are:

1. Detailed course grade calculations and requirements
2. Lab materials (all lab handouts and lab related material)
3. Lecture notes
4. **After March 30, 2020, I will provide all the necessary course materials and teaching materials on Canvas, which include:**

- a. detailed course guidelines
- b. the new Lab list and requirements
- c. All exams
- d. Lecture notes, video and/or audio

Canvas: Eagle Online Canvas <https://eagleonline.hccs.edu/login/ldap>. Log in directions for Eagle Online appear on the page itself. Your username is your "W" number used for registration purposes. For technical issues, please call 713-718-2000.

It is the student's responsibility to log onto the Eagle Online on a regular basis to check for announcements, access course materials, and check email. This is also considered by the College a form of attendance as well as participation in the course. Additionally, students should confirm their correct email address is linked to Eagle Online so that they may send AND receive correspondence from the instructor.

It is highly recommended to download instructional materials well in advance in the case of technical issues so that you are always prepared for class. You may also contact the instructor for material in the event that your Eagle Online access is intermittently restricted due to technical or enrollment issues. Students who no longer appear on the class roster because they have been dropped (for lack of attendance, non-payment, financial aid issues, Etc.) will not have access to Canvas or be able to complete assignments/earn grades.

HCCS Open Lab locations may be used to access the Internet and Canvas, or you may use your own computer. **USE FIREFOX OR CHROME AS THE INTERNET BROWSER.**

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HCC Online Information and Policies

Here is the link to information about HCC Online classes including the required Online Orientation for all fully online classes: <http://www.hccs.edu/online/>

Scoring Rubrics, Sample Assignments, etc.

The lab reports are graded on the basis of presentation, completeness, neatness, and the correctness of the calculations tied to the experimental result. Points are taken off if the units are not mentioned in the data and results, graphs are not well made, if the conclusions are vague and generalized, or if the procedure is simply copied from the manual. Plagiarism is also not acceptable. You must write your own reports.

Instructional Materials

Textbook Information

<<Enter Textbook information here>>

There is no required textbook for laboratory experiments. Reading material is placed on Canvas.

Tutoring

HCC provides free, confidential, and convenient academic support, to HCC students in an online environment and on campus. Tutoring is provided by HCC personnel in order to ensure that it is contextual and appropriate. Tutoring may be both online or in-person in most campuses. Visit the [HCC Tutoring Services](#) website for services provided.

Libraries

The HCC Library System consists of 9 libraries and 6 Electronic Resource Centers (ERCs) that are inviting places to study and collaborate on projects. Librarians are available both at the libraries and online to show you how to locate and use the resources you need. The libraries maintain a large selection of electronic resources as well as collections of books, magazines, newspapers, and audiovisual materials. The portal to all libraries' resources and services is the HCCS library web page at <http://library.hccs.edu>.

Supplementary Instruction

Supplemental Instruction is an academic enrichment and support program that uses peer-assisted study sessions to improve student retention and success in historically difficult courses. Peer Support is provided by students who have already succeeded in completion of the specified course, and who earned a grade of A or B. Find details at <http://www.hccs.edu/resources-for/current-students/supplemental-instruction/>.

Course Overview

For science and engineering majors. Selected experiments in technical physics. Core Curriculum course. Over twelve experiments will be performed in accordance with the attached schedule. These experiments will cover topics associated with PHYS 2326.

Core Curriculum Objectives (CCOs)

PHYS 2126 satisfies the physical science requirement in the HCCS core curriculum. The HCCS Physics Discipline Committee has specified that the course address the following core objectives:

- **Critical Thinking:** Students will demonstrate the ability to engage in inquiry and analysis, evaluation and synthesis of information, and creative thinking by demonstrating problem solving skills on homework and exams.
- **Communication Skills:** Students will demonstrate effective development, interpretation and expression of ideas through written, and visual communication.
- **Quantitative and Empirical Literacy:** Students will demonstrate the ability to draw conclusions based on the systematic analysis of topics using observation, experiment, and/or numerical skills by completing textbook reading assignments,

completing assignments, and answering questions on quizzes and/or exams.

Program Student Learning Outcomes (PSLOs)

1. To provide the student a basic and practical understanding of physics (basic qualitative and quantitative concepts, and systematic problem-solving strategies) and recognize its relevance in our daily lives.
2. To prepare students to meet with success in higher level Physics and other science courses when they transfer to four-year universities.
3. To prepare students for professional programs requiring a mastery of General Physics, such as Physics, Chemistry, Mathematics and engineering.

Course Student Learning Outcomes (CSLOs)

Upon successful completion of PHYS 2126, students should be able to:

1. Design and perform experiments, collect and analyze data, and interpret results obtained in a laboratory setting.
2. Analyze, evaluate, and test a model or scientific hypothesis by comparing with experimental data.
3. Use scientific language to demonstrate an understanding of the difference between scientific and non-scientific interpretations of phenomena observed

Learning Objectives

- 1.1 Identify appropriate sources of information for conducting laboratory experiments.
- 1.2 Design and/or conduct basic experiments involving principles of electricity and magnetism.
- 1.3 Demonstrate competency in the use of laboratory instrumentation, including computer tools for data collection.
- 2.1 Relate physical observations and measurements involving electricity and magnetism to theoretical principles.
- 2.3 Evaluate the accuracy of physical measurements and the potential sources of error in the measurements.
- 3.1 Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner

Student Success

<< Modify Section & Delete Placeholder Text >>

Expect to spend about twice as many hours per week outside of class as you do in class studying the course content and written assignments. Successful completion of this course requires a combination of the following:

- Reading the manual before coming to class
- Attending class in person
- Completing assignments

Instructor and Student Responsibilities

As your Instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar that will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required

As a student, it is your responsibility to:

- Attend class in person
- Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
- Read and comprehend the textbook
- Complete the required assignments and exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments
- Be aware of and comply with academic honesty policies in the HCCS Student Handbook

Assignments, Exams, and Activities

Homework Assignments

LAB REPORT FORMAT:

The total grade for the Lab reports is **50%**.

Each Lab. report should be typed (except for the data sheet and calculations), and should include:

1. A Cover/title page:

On this page include your Index number (this number is used only this class and this semester. The index number will be assigned by the instructor), name; course name and number; the number and the title of the Lab; and date of the experiment.

2. The instruction pages:

2.1 The Purpose / Objectives of the experiment

2.2 The List of Apparatus / Equipments used in the experiment

2.3 The Theory and equations used.

2.4 Summary of the procedures followed

3. Data and observations:

Record all your measurements carefully in a tabular form. Use data sheets from the manuals. Be sure to write the units for the data.

4. Data Analysis / Calculations:

Carry out all the calculations using your data showing your steps clearly. Draw graphs / diagrams whenever required and explain what they mean. For instance if you have got a straight line graph, determine its slope and relate the slope to the physical problem at hand.

5. Results:

Make a Table in which you should show the final results that you have obtained in this experiment. By 'final results' is meant those results that meet the objectives of the experiment. Be sure to consider significant figures, and include the units and percent errors in the results.

6. Discussion/Conclusion:

In this section, include a summary, conclusion and discussion of the results. This usually requires you to state how good your results are in comparison with the objectives you stated at the beginning of your report. Compare your results with accepted values and state the percentage error. Discuss the sources of these errors and give other comments you would like to make about the experiment. Discuss areas of improvement in procedure to reduce errors.

ADDITIONAL INFORMATION

- All the labs are online. The instructor will provide the online lab materials. We are going to use PhET online Simulation Lab tool and some others. Lab groups are no longer necessary. Each student should independently follow the instructions to finish his lab and upload the lab report on Canvas.
- You may need to keep a copy of your Lab reports.

Lab Independent Study

The total grade for the independent study is 10%.

Since we will change to the online format, I will assign you an online Lab named as "Independent study" and it will be 10% of your course grade.

Exams

The purpose of the exam is to test knowledge of the principles and theories of the Lab experiments. The questions will be similar to the Pre-Lab, Post Lab quizzes, and related to the performance of the Lab experiments. During exams, all book bags, satchels, cellphones,

notebooks, laptops etc. will be placed at the side of the desk. Visits to the restroom will be limited. All exams are closed book and note.

In-Class Activities

The total grade for the attendance is 5%. The total grade for the Lab Participation is 5%.

Since we will change to the online format, the previous in-class activity and attendance procedures will not apply. I will post quiz questions which belong to the above two categories to check whether you have studied the online material on time.

Final Exam

All students will be required to take a comprehensive final exam (30%). Students who are absent from the final exam without a valid and compelling reason will receive a failing course grade. The final exam will be comprehensive, i.e. includes all Labs done in class.

Bonus Points

The instructor may make a small adjustment to the student's grade if the student shows a strong desire of active learning. For example, well-prepared before the each Lab, teaches or help other students, maintains and organizes a very good Lab environment, etc.

Grading Formula

Semester Grade

$$= \text{Final Exam} \times 30\% + \text{Lab Average} \times 50\% + \text{Lab Independent Study} \times 10\% + \text{Att} \times 5\% + \text{Lab Participation} \times 5\% + \text{Bonus Point}$$

Grading Scale: A = 90 – 100%
 B = 80 – 89%
 C = 70 – 79%
 D = 60 – 69%
 F < 60

Time/date for correcting grade mistakes

If students think the instructor made mistakes about their grades, they should contact the instructor as soon as possible. The instructor will explain why he give the grade(s), or make proper changes if the instructor did make mistake(s).

1. For the grade related to homework, Lab reports, students should contact the instructor before the last week of the semester (May 8) except those grades have not yet been posted. If students find errors, they should contact the instructor ASAP, do not wait to the last moment.
2. For the grades related to final exam, students should contact the instructor within 12 hours (one day) once the grades are posted.
3. All other grades related such as attendance, Lab participation, etc., students should contact the instructor within two days once the grades are posted.

Incomplete Policy:

A student who has completed at least 85% of the work in the class, but misses the final exam due to unavoidable circumstances may receive a grade of "Incomplete" ("I"). The student must provide proof of these circumstances before or within 24 hours of the exam. Such students would have to take the final exam in the following semester.

HCC Grading Scale can be found on this site under Academic Information:

<http://www.hccs.edu/resources-for/current-students/student-handbook/>

Course Calendar

Lab Schedule
Review of Syllabus; Lab-1: Simple Harmonic Motion Lab-2A: Resonance of Air Columns Lab-2B: Standing Wave
Lab-3: Electric Field Line Mapping Lab-4: Circuit Board Study and Ohm's Law Lab-5: Series and Parallel Circuit use PhET online Simulation Lab-6: Combination of Series and Parallel Circuit use PhET online Simulation
Lab-7: Kirchhoff's Rules use PhET online Simulation Lab-8: RC Circuit use PhET online Simulation Lab-9: RL Circuit Lab-10: RLC Circuit
Lab-11 geometric optics use PhET online Simulation Lab-12 Focal length of Lenses and Mirrors Lab-13: Diffraction Grating Lab-14: Independent Study Lab
March 30, Online course transfer begins
Final Exam (Focused on Lab-1 to Lab-8, and Independent Lab Study)

Important date on HCC Academic Calendar:

April 6	Spring 2020 Reg 16-Wk: Last day to withdraw
January 20 (Mo)	Martin Luther King Jr. Day
February 17 (Mo)	President's Day
March 16 - 22	Spring Break
April 10 (Friday)	Spring Holiday
Final Exam – Spring 2020	
May 15 (or May 8 Fr)	PHYS 2126-10704-C2 Fr (11:00AM-1:50PM)

Syllabus Modifications

The instructor reserves the right to modify the syllabus at any time during the semester and will promptly notify students in writing, typically by e-mail, of any such changes.

Instructor's Practices and Procedures

Missed Assignments

No make-up exams, labs, quizzes, or homework are given except for extremely special circumstances like medical emergencies or similar situations. Medical emergencies require a physician's note. Weddings, birthdays, vacations, etc. do not count as reasonable excuses. There will be no credit for any missing or late assignments.

Academic Integrity

You are expected to be familiar with the College's Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you. Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Here's the link to the HCC information about academic integrity (Scholastic Dishonesty and Violation of Academic Scholastic Dishonesty and Grievance):

<http://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-procedures/>

"Cheating" includes but is not limited to:

- Copying from another student's work
- Using unauthorized materials including electronic devices for tests, assignments, and classroom activities
- Collaborating with another student during a test without authority
- Knowingly using, buying, selling, stealing, transporting or soliciting in whole or part the contents of an unadministered test
- Bribing another person to obtain a test that is to be administered
- Unauthorized talking during tests, assignments, and classroom activities
- "Plagiarism" means using another person's words or ideas as one's own without properly citing where and from whom you obtained the original work.
- "Collusion" means the unauthorized collaboration with another person in preparing written work submitted for credit.
- Other actions may constitute scholastic dishonesty. This is not an exhaustive list.

Academic dishonesty, as listed above, which includes but is not limited to collusion, plagiarism, copying any part of any assignment or exam, sharing exam information or communicating (verbal or otherwise) during an exam, or utilization/manipulation of unauthorized electronic devices during exams/assignments or exam reviews, will not be tolerated. **Penalties can include a grade of "0" or "F" on the particular assignment, failure of the course, and/or disciplinary action as determined by the Student Code of Conduct and Discipline Procedures. If you are caught cheating, any of the above actions may be taken for ALL students involved.**

“Scholastic dishonesty”: includes, but is not limited to, cheating on a test, plagiarism, and collusion. There is a **Zero tolerance** for any type of academic dishonesty.

Attendance Procedures

The instructor observes the HCC Attendance Policy in the Student Handbook. Attendance is noted and submitted to the College every class period or monitored online. Students who miss more than 12.5% of the course may be subject to drop. Regular attendance is highly encouraged not only because each class provides valuable information in physics and “house-keeping” information about the course, for which the student is responsible. Students may elect to drop the class themselves. The last day for dropping the course according to the academic calendar is **April 6**. It is the student’s responsibility to drop if he/she wishes to do so. Drop dates and times should be confirmed by the student.

Student Conduct

Students are expected to maintain cordial and professional conduct as would be expected of an academic environment and as laid out in the Student Handbook. Please be considerate in your correspondence with the instructor and/or any classmates as well as in any in-person interaction.

Please arrive and leave class on time so as to cause little disruption and avoid missing important class information and/or assignments.

Academic integrity is also considered to be a part of appropriate conduct.

Every student as well as the professor has the right to work in a healthy learning environment based on mutual respect and adherence to rules. Conduct unbecoming of such an environment must be avoided.

Instructor’s Course-Specific Information (As Needed)

During the semester, the instructor normally posts student’s grades on canvas within one week (most of the time, within two days) once the students turn in their assignments.

If a student believes the instructor made a mistake regarding their grade on an assignment, he/she should contact the instructor as soon as possible. The instructor will explain why he/she gave the grade, or make proper changes for mistake.

For grades related to homework, lab reports, students should contact the instructor before the last week of the semester except for those grades that have not yet been posted. If students find errors, they should contact the instructor as soon as possible.

For the grades related to the Final exam, students should contact the instructor within 12 hours once the grades are posted. For all other grades related to attendance, etc., students should contact the instructor before the date of final exam.

Electronic Devices

The use of electronic devices (cell phones, laptops, etc.) by students in the classroom is up to the discretion of the instructor. Any use of such devices for purposes other than student learning is strictly prohibited. If an instructor perceives such use as disruptive and/or inappropriate, the instructor has the right to terminate such use. If the behavior continues, the student may be subject to disciplinary action to include removal from the classroom or referral to the dean of student services

Cell phone or electronic device use in class is NOT PERMITTED, particularly during testing/labs. It is understandable that a need arises to tend to personal or urgent matters, but that should not be habitual nor disruptive. A student may excuse themselves from class to tend to a pressing matter. However, cell phone use is otherwise not permitted in class.

No communication or photographs may be taken during class either, of persons or course material (ie exams, keys, quizzes, etc.) using a device and no testing material may be removed from the class at any time.

If students choose to use laptops or tablets (or other electronic device with wifi, cellular or communication capabilities including cell phones and watches), they should be for classroom related purposes only and during times permitted.

Cell phones are not calculators and will not be permitted to be used as a calculator.

Physics Program Information

Please visit the Physics Program page on the HCCS website for information regarding degree offerings, requirements, employment prospects and more.

<https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/physics/>

HCC Policies

Here's the link to the HCC Student Handbook <http://www.hccs.edu/resources-for/current-students/student-handbook/> In it you will find information about the following:

- Academic Information
- Academic Support
- Attendance, Repeating Courses, and Withdrawal
- Career Planning and Job Search
- Childcare
- disAbility Support Services
- Electronic Devices
- Equal Educational Opportunity
- Financial Aid TV (FATV)
- Incomplete Grades
- International Student Services
- Health Awareness
- Libraries/Bookstore
- Police Services & Campus Safety
- Student Life at HCC
- Student Rights and Responsibilities
- Student Services
- Testing
- Transfer Planning

- General Student Complaints
- Grade of FX
- Veteran Services

EGLS³

The EGLS³ ([Evaluation for Greater Learning Student Survey System](#)) will be available for most courses near the end of the term until finals start. This brief survey will give invaluable information to your faculty about their teaching. Results are anonymous and will be available to faculty and division chairs after the end of the term. EGLS³ surveys are only available for the Fall and Spring semesters. EGLS³ surveys are not offered during the Summer semester due to logistical constraints.

<http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/>

Campus Carry Link

Here's the link to the HCC information about Campus Carry:

<http://www.hccs.edu/departments/police/campus-carry/>

HCC Email Policy

When communicating via email, HCC requires students to communicate only through the HCC email system to protect your privacy. If you have not activated your HCC student email account, you can go [to HCC Eagle ID](#) and activate it now. You may also use Canvas Inbox to communicate.

Housing and Food Assistance for Students

Any student who faces challenges securing their foods or housing and believes this may affect their performance in the course is urged to contact the Dean of Students at their college for support. Furthermore, please notify the professor if you are comfortable in doing so.

This will enable HCC to provide any resources that HCC may possess.

Office of Institutional Equity

Use the link below to access the HCC Office of Institutional Equity, Inclusion, and Engagement (<http://www.hccs.edu/departments/institutional-equity/>)

disAbility Services

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including long and short term

conditions, mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to <http://www.hccs.edu/support-services/disability-services/>

Title IX

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

David Cross
Director EEO/Compliance
Office of Institutional Equity & Diversity
3100 Main
(713) 718-8271
Houston, TX 77266-7517 or Institutional.Equity@hccs.edu
<http://www.hccs.edu/departments/institutional-equity/title-ix-know-your-rights/>

Office of the Dean of Students

Contact the office of the Dean of Students to seek assistance in determining the correct complaint procedure to follow or to identify the appropriate academic dean or supervisor for informal resolution of complaints.

<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/>

Department Chair Contact Information

Department Chair: Dr. Kumela Tafa, kumela.tafa@hccs.edu, 713-718-5569

Department Chair's Secretary: Ms. Nettie Muhammad, nettie.muhammad@hccs.edu, 713-718-6050.

