



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

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

PHYS 2126: University Physics Laboratory II | Lab | #24812

Spring 2021 | 16 Weeks (2/16/2021-5/16/2021)

In Person | Second Start | TuTu 2:00 - 3:50 p.m. | HCC Online

3 Credit Hours | 48 hours per semester

Instructor Contact Information

Instructor:	Aqiang (AQ) Guo	Office Phone:	713-718-2799
Office:	Online through Webex	Office Hours:	By appointment
HCC Email:	aqiang.guo@hccs.edu	Office Location:	Online

Course design (Lecture: Online; Lab: On campus)

This is an online lab with hands-on kits. Students will collect their kits a week before the class starts and specific schedule will be emailed close to the collection date.

All the online lab meetings are through Cisco Webex. The meeting schedules are **Tuesday and Thursday from 2:00 to 3:50PM**.

How to join the Webex meeting

1. Log into your canvas account.
2. Go to the class.
3. Click on Cisco WebEx.
4. Click on "Virtual meeting".
5. Click on join, then choose open the meeting.

Facilities needed for the online course

Since this is an online course, students must have their facilities (computer/laptop, a stable internet, software, etc.) that allow them to access Eagle Online (Canvas) and finish their tasks. You may consider to use HCC Outdoor WiFi Zones if your internet is not stable. HCC Outdoor WiFi Zones:

<https://www.hccs.edu/resources-for/current-students/outdoor-wifi-zones/Links to an external site.>

Final exam on Canvas is conducted using LockDown Browser and Respondus Monitor. Hence, students must have Respondus LockDown Browser and a Webcam equipped computer.

Instructor's Preferred Method of Contact

- **Canvas Inbox**
- Canvas Announcements
- HCC Email

Students must use their HCCS.edu email or Canvas Inbox for communication. I will not respond to any other form of email like Gmail. The preferred contact is through Canvas Inbox. 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.

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

I will be posting messages for the class in "announcements". You should check this often, especially before an exam.

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—I'm delighted that you have chosen this course! One of my passions is to know as much as I can about the universe around me, and I can hardly wait to pass that knowledge on. I will present these physical principles in the most exciting way I know, so that you can grasp the concepts and apply them now and hopefully throughout your 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. This class is as much an exercise in critical thinking and problem solving as it is in any particular theory or principle. The best way to improve your problem solving skills is to work as many problems as you can. My goal is for you to walk out of the course with a better understanding of yourself and the universe around you. So please visit me or contact me by email whenever you have a question.

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 provide the detail grading records, and all the course materials. The course information and course materials on Canvas are:

- Detailed course grade records
- Lab materials
- Final Exam

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.

Check your laptop/desktop for eagle online (canvas):

To access Eagle Online, you will need a PC (Windows 7 sp1 or better), or Mac (OS X 10.8 or better) with a broadband connection to the Internet.

Canvas Browser Requirements:

- Canvas recommends the use of the latest version of any web browser. It's important to update your web browser regularly.
- Pop-ups must be enabled. Disable your pop-up blockers.
- Javascript must be enabled
- Cookies must be enabled
- Install the most commonly used internet plugins and keep them updated
- USE [FIREFOX](#) OR [CHROME](#) AS THE INTERNET BROWSER.

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.

Canvas cannot open image file with .HEIC format

IPhones record photos by default as .HEIC format which Canvas cannot open. Students can change their iPhone photo settings to record photos in the commonly accepted .JPEG format. Here's a guide on it here: <https://www.youtube.com/watch?v=0fOfMgpddOw>

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.

Homework sets, quizzes and exams will consist of show-work questions. Marks are usually reserved for:

- Making a sketch
- Writing the equations used
- Unit conversions, if required
- Calculation of intermediate values, and
- Correct units in the final answer.

You must write the equation/s that you are using before plugging in the numbers. The points assigned to each question is mentioned in the Homework sets and quizzes. Just giving the answer without showing the working usually earns no points.

Instructional Materials

Textbook Information

There is no required textbook for this course. General course information as well as reading material relevant to each laboratory experiment will be placed on the Canvas course site.

Tutoring

HCC provides free, confidential, and convenient academic support, including writing critiques, 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. 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

Laboratory experiments supporting theoretical principles presented in PHYS 2326 involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light, and optics; experimental design, data collection and analysis, and preparation of laboratory reports.

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 and recognize its relevance in our daily lives.
2. To prepare our students for success in higher level physics courses to satisfy their major requirements and prepare them for success in other science courses when they transfer to four-year colleges and universities.
3. To enhance class lectures with related, hands-on laboratory experience of setting up and performing the experiments, gathering related data, analyzing and evaluating the results, drawing conclusions and writing acceptable reports with involvements of lab group members or as individuals; and drawing conclusions thereby fostering collaborative learning.

Course Student Learning Outcomes (CSLOs)

Upon completion of PHYS 2126, the student will 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

Upon successful completion of this course, students should be able to:

- 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.
- 2.2 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

Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time will be required for written assignments. The assignments provided will help you use your study hours wisely. Successful completion of this course requires a combination of the following:

- Reading the Laboratory materials
- Follow the instructions for each experiment
- Logging in to Canvas daily
- Completing assignments
- Participating in class activities

There is no short cut for success in this course.

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:

- Check the Canvas site for new messages/announcements daily
- Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
- Participate actively in performing the Lab experiments with your group-mates

- Read and comprehend the course materials
- 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

Laboratory Procedures

All the labs will be performed by using with hands-on kits provided by HCC and online simulations. These will be completely online and submissions must be made via Canvas. Every student will be responsible for submitting the work required for each lab activity, group reports will not be used. These activities will replace the normal lab report grades.

All the online lab meetings are through Cisco Webex. The meeting schedules are **Tuesday and Thursday from 2:00 to 3:50PM. Students must join the scheduled online lab meeting.** Lab time is for setting up equipment, taking data, calculating results and disassembling equipment. *Failure to adhere to these policies will result in a reduction in lab participation grade.*

Attendance

Attendance in the lab is extremely important. Each lab begins at 2:00 pm. Missing part of a lab, being late or leaving early may affect the student's participation grade. *Students who miss a full lab will not be allowed to submit a lab report based upon data from another student.* There will be a single make up lab period built into the schedule where a single missed lab will be able to be completed. If you miss more than one lab session without a valid excuse approved by the instructor, you will not be able to make up any subsequently missed labs.

Lab Reports

A lab report write up is to be submitted for each lab (or online activity) that is performed. *The lab reports are usually due exactly one weeks from when a lab is completed.* For full credit, lab reports should be turned in on time according to the appropriate assignment in Canvas. Lab report submissions must be in a readable file format (such as a pdf or jpeg file) to get credit. **In particular, heic files are not accepted! Email submissions will also not be accepted!**

Even though the system will let you submit the Lab reports up to the "Available Until" date and time, it will limit your points to 75% of the maximum right after the due date and time, and to 50% one day later, so do not put it off for the last minute.

Final Exam

All students will be required to take a comprehensive final exam. Students who are absent from the final exam will receive a failing course grade.

Grading Formula

The final grade is based on the total possible score of 100%, which the student can accumulate from all lab activities, reports, and the final exam.

Grading Scale:

Lab Reports: 65%

Lab Participation: 10%
 Final Exam (mandatory): 25%

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

HCC Grading Scale can be found on this site under Academic Information:
<http://www.hccs.edu/resources-for/current-students/student-handbook/>

Course Calendar

This is a rough outline of the expected course content. Anything and everything is subject to change.

Week	Date	Lab Performed	Lab Report Due
5	2/16	Introduction	
	2/18	Lab 1 – Electric Field Line (online)	
6	2/23	Lab 2 – Make ready for the lab kit	
	2/25	Lab-3: Ohm's Law	Lab-1
7	3/02	Lab-4: Series and Parallel Circuits	Lab-2
	3/04	Lab-4: Series and Parallel Circuits	Lab-3
8	3/09	Lab-5: Combination of Series and Parallel Circuits	
	3/11	Lab-6: Kirchhoff's Rules I	Lab-4
9	3/23	Lab-6: Kirchhoff's Rules I	Lab-5
	3/25	Lab-7: Kirchhoff's Rules II	
10	3/30	Lab-8: RC circuit I	Lab-6
	4/01	Lab-9: RC circuit II	Lab-7
11	4/06	Lab-10: RLC Circuit	Lab-8
	4/08	Lab-10: RLC Circuit	Lab-9
12	4/13	Lab-11: Optics Lab (TBD)	
	4/15		Lab-10
13	4/20	Lab-12: Optics Lab (TBD)	Lab-11
	4/22		
14	4/27	Lab-13: Optics Lab (TBD)	Lab-12
	4/29		
15	5/04	Lab Make Up session	Lab-13
	5/06	Lab Final Exam	

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

Late Assignments

Even though the system will let you submit the Lab reports up to the "Available Until" date and time, it will limit your points to 75% of the maximum right after the due date and time, and to 50% one day later, so do not put it off for the last minute.

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/>

Attendance Procedures

HCC's Attendance Policy is stated in Students Handbook as follows: *"You are expected to attend all lecture classes and labs regularly. You are also responsible for materials covered during your absences. Instructors may be willing to consult with you for make-up assignments, but it is your responsibility to contact the instructor. Class attendance is checked daily. Although it is your responsibility to drop a course for nonattendance, the instructor has the authority to drop you for excessive absences. You may be dropped from a course after accumulating absences in excess of 12.5 percent of the total hours of instruction (lecture and lab). For example:*

- *For a three credit-hour lecture class meeting three hours per week (48 hours of instruction), you can be dropped after six hours of absence.*
- *For a four credit-hour lecture/lab course meeting six hours per week (96 hours of instruction), you can be dropped after 12 hours of absence."*

If circumstances significantly prevent you from attending classes, please inform the instructor.

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.

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 during exams.

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)
- General Student Complaints
- Grade of FX
- 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
- 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/eqls3-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.