



# University Physics I-12285

## PHYS-2325

RT 2023 Section 6 3 Credits 01/17/2023 to 05/14/2023 Modified 01/10/2023

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### Our Vision

Houston Community College shapes the future for all students with innovative, affordable, timely, responsive, and continuously improving educational programs and services. Partnered with the communities we serve, we take a defining role in regional economic, workforce, and social development.

<https://www.hccs.edu/about-hcc/> (<https://www.hccs.edu/about-hcc/>)

### Course Meetings

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#### Course Modality

##### In-Person (P)

Safe, face-to-face course with scheduled dates and times. Meets in-person, on campus.

#### Meeting Days

Mondays and Wednesdays

#### Meeting Times

11:00 am - 12:20 pm

#### Meeting Location

SE Workforce Rm 215

### Welcome and Instructor Information

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#### Dr. Aaron Marks

Email: [aaron.marks@hccs.edu](mailto:aaron.marks@hccs.edu)

Office: AM 101

Phone: 713-718-5657

#### 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 I—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 contact me whenever you have a question.

## Preferred Method of Contact

You may reach me via email (preferably) or phone. **Please use your student HCCS.edu email or Canvas inbox for all course communication.** I will only send correspondence to your student account so please check it regularly as you are responsible for content of messages. Students may access email via Canvas or student sign-ins. Please allow sufficient time for a response. I will respond to emails within 24 hours Monday through Friday; I will reply to weekend messages at some time before or on Monday morning.

## Office Hours

Monday, Wednesday, 12:30 PM to 1:30 PM, AM 101

or by appointment virtually via Webex

## Course Overview

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First semester of a two semester, calculus-based physics course designed specifically for chemistry, physics, and engineering majors. Topics include principles and applications of classical mechanics, kinetic theory, fluid flow, and thermal physics, with emphasis on problem solving.

### Requisites

PHYS 2325 requires college-level reading, writing and maths skills, including calculus. You are most likely to succeed if you have already taken and placed into GUST 0341 (or higher) in reading and be placed into MATH 2413 (or higher). If you have enrolled in this course having satisfied these prerequisites, 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](#).

## Department Website

[Physics | Houston Community College - HCC \(hccs.edu\)](#)

## Core Curriculum Objectives (CCOs)

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PHYS 2325 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.

## Student Learning Outcomes and Objectives

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### 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 completion of PHYS 2325, the student will be able to:

1. Use vector analysis and calculus to solve kinematics and dynamics problems.
2. Apply Newton's laws of motion to analysis of dynamics problems.
3. Relate the concept of total work done to the change in kinetic energy of a particle.
4. Identify different forms of energy and transformation of energy.
5. Apply conservation laws (conservation of energy and linear momentum) to the analysis of dynamics of a particle or a system of particles.
6. Apply Newton's laws of motion to rotational motion.
7. Understand basics of Thermodynamics

## Learning Objectives

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

- 1.1 Solve one and two-dimensional kinematics problems.
- 1.2 Analyze motion of free-falling object, projectile motion, and particle in circular motion.
- 2.1 Use Newton's Laws of motion in solution of dynamics problems.
- 2.2 Draw free body diagrams in situations involving forces.
- 3.1 State the Work - Energy -Theorem and apply it to the analysis of dynamics problems.
- 4.1 Define potential energy and relate it to conservative forces;
- 4.2 Relate internal energy to the work done by non - conservative forces.
- 5.1 State the Law of Conservation of Energy.
- 5.2 Use the Law of Conservation of momentum in the analysis of collisions.
- 6.1 Solve simple problems involving rotational dynamics.
- 6.2 State the conditions for equilibrium and apply them to solution related to equilibrium.
- 7.1 Solve basic thermodynamic problems.

## Departmental Practices and Procedures

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### Department Specific 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](#)

## Program-Specific Student Success Information

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 chapter before coming to class
- Attending class in person
- Completing assignments
- Solving as many end-of-chapter problems as possible

There is no short cut for success in this course; it requires studying the material and solving problems using the course objectives as your guide.

## Instructional Materials and Resources

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### Inclusive Access

This course participates in the Houston Community College First Day Program. A discount has been applied to the required digital course materials. The discounted charge has been added to students' tuition and fee bills.

Students will access course materials through a link in Canvas. Instructions for opting out of the HCC First Day Program are also posted in Canvas. Students who opt out will be responsible for obtaining required course materials.

### Instructional Materials

The [HCC Online Bookstore \(https://hccs.bncollege.com/shop/hccs-central/page/find-textbooks\)](https://hccs.bncollege.com/shop/hccs-central/page/find-textbooks) provides searchable information on textbooks for all courses. Check with your instructor before purchasing textbooks because the book might be included in your course fees.

The textbook listed below is *required* for this course.

### Fundamentals of Physics

**Author:** Halliday, Resnick, and Walker

**Publisher:** Wiley

**Edition:** 12th

**ISBN:** 978-1-119-77351-1

**Availability:** Provided by First Day Inclusive Access

### Other Instructional Resources

#### Courseware

No other courseware is required for this course.

## Course Requirements

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## Assignments, Exams, and Activities

Type	Weight	Topic	Notes
Homework Assignments	18%		<p>Problems are assigned from the text after every chapter is covered. Students are strongly advised to attempt all these selected problems and other problems from the text. In general, students who fail to do these assigned problems will not do well in the course.</p> <p>Homework is to be submitted online via Canvas. Each homework assignment will open up for online submission a few days before it is due. Please take scans or pictures of your work and submit it to Canvas. Homework submissions must be in a readable file format (such as a pdf or jpeg file) to get credit, in particular, heic file types are not accepted. Email submissions will not be accepted!</p> <p>Late homework is accepted for half credit (until the date of the final class session). Homework can be done collaboratively but every student is responsible for submitting their own solutions. <i>All work necessary in obtaining a solution should be shown to receive full credit.</i></p>
Exams	57% (3 Exams at 19% each)		<p>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. An equation sheet will be provided for each exam. The purpose of the exam is to test knowledge of the principles and theories presented during class. Exam problems will be similar (<i>not the same</i>) as examples worked during class or problems from the homework. Exam grades will be curved. <b>No exam grade is ever dropped!</b></p> <p>Note, the format of exams may change due to the on-going pandemic situation.</p>
Final Exam	25%		<p>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. The time and date of the final exam is listed on HCC's website at <a href="https://www.hccs.edu/student-experience/events-calendar/">https://www.hccs.edu/student-experience/events-calendar/</a>. The final exam will only be administered during the time and date given by HCC's Final Exam Schedule.</p>
Extra Credit	0%		<b><u>Extra Credit is not given for any reason!</u></b>

## Grading Formula

Grade	Range	Notes
A	100-90	Excellent performance
B	89-80	Good performance
C	79-70	Adequate performance
D	69-60	Poor performance
F	> 60	Failing performance

## \* Instructor's Practices and Procedures

### Incomplete Policy

It is the policy of the Department of Natural Sciences not to assign a grade of Incomplete (I) except in the rarest of circumstances (such as completing all coursework in a satisfactory manner but missing the final exam due to an unavoidable event).

### Missed Assignments/Make-Up Policy

*Homework assignments are to be turned in by the due date given in Canvas to be counted for full credit.* Late homework is accepted for half credit (until the date of the final class session before the final exam).

There are no make-up exams, therefore, make every effort to take exams on their scheduled date. **If an exam is missed, a zero will be recorded for that exam grade!!** In extremely rare circumstances, if a valid excuse has been approved (by the instructor), the corresponding section on the final exam will count as both parts of your final exam grade as well as the missed exam grade.

## 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):

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

Note, it is not the instructor's responsibility to withdraw students from the course. If a student cannot meet the attendance requirements, they should withdraw themselves from the course to prevent a failing grade due to non-attendance (XF).

## 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.

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 will not be tolerated.

Please refer to the Student Handbook concerning grievances, complaints, discipline (including student conduct), and scholastic dishonesty and student rights. Please contact me if you require any reasonable accommodation to achieve your academic responsibilities.

## Instructor's Course-Specific Information

### Messages/Emails:

Students can expect a response from me within 24 hours, except on weekends or holidays.

### Grades:

Students can expect grades for any on-time assignment to be posted within a week after the due date.

### *Course Changes*

If there are any changes to the class schedule or location, I will notify the class by email as well as by an announcement within Canvas, as soon as practical after I learn of the required change. For cancellation of classes, check the HCC website.

## 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 devices with wifi, cellular or communication capabilities including cell phones and watches), they should be for classroom related purposes only and during times permitted.

For in class exams, all electronic devices other than a calculator are forbidden.

Cell phones (and other internet capable devices) are not calculators and will not be permitted to be used as a calculator during exams.

## Faculty Statement about 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:

- Attending required class sessions
- Logging in to the Canvas site and checking your HCC email daily
- Understanding the course material, either by reviewing the textbook or online materials in Canvas
- Completing assignments
- Participating in class activities

There is no short cut for success in this course; it requires studying the material and solving problems.

## Faculty-Specific Information Regarding Canvas

This course section will use Canvas (<https://eagleonline.hccs.edu> (<https://eagleonline.hccs.edu>)) to supplement in-class assignments, exams, and activities.

HCCS Open Lab locations may be used to access the Internet and Canvas. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades.

## Social Justice Statement

Houston Community College is committed to furthering the cause of social justice in our community and beyond. HCC does not discriminate on the basis of race, color, religion, sex, gender identity and expression, national origin, age, disability, sexual orientation, or veteran status. I fully support that commitment and, as such, will work to maintain a positive learning environment based upon open communication, mutual respect, and non-discrimination. In this course, we share in the creation and maintenance of a positive and safe learning environment. Part of this process includes acknowledging and embracing the differences among us in order to establish and reinforce that each one of us matters. I appreciate your suggestions about how to best maintain this environment of respect. If you experience any type of discrimination, please contact me and/or the Office of Institutional Equity at 713-718-8271.

## HCC Policies and Information

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### HCC Grading System

HCC uses the following standard grading system:

Grade	Grade Interpretation	Grade Points
A	Excellent (90-100)	4
B	Good (80-89)	3
C	Fair (70-79)	2
D	Passing (60-69), except in developmental courses.	1
F	Failing (59 and below)	0
FX	Failing due to non-attendance	0
W	Withdrawn	0
I	Incomplete	0
AUD	Audit	0
IP	In Progress. Given only in certain developmental courses. A student must re-enroll to receive credit.	0
COM	Completed. Given in non-credit and continuing education courses.	0

## Link to Policies in Catalog and Student Handbook

Here's the link to the HCC Catalog and Student Handbook: <https://catalog.hccs.edu/> (<https://catalog.hccs.edu/>)

In it you will find information about the following:

- Academic Information
- Academic Support
- Attendance, Repeating Courses, and Withdrawal
- Career Planning and Job Search
- Childcare
- Ability 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

## Link to HCC Academic Integrity Statement

<https://www.hccs.edu/student-conduct> (<https://www.hccs.edu/student-conduct>) (scroll down to subsections)

## Campus Carry Link

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

<https://www.hccs.edu/campuscarry> (<https://www.hccs.edu/campuscarry>)

## 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 \(https://www.hccs.edu/email\)](https://www.hccs.edu/email) and activate it now. You may also use Canvas Inbox to communicate.

## Office of Institutional Equity

Use the following link to access the HCC Office of Institutional Equity, Inclusion, and Engagement: <https://www.hccs.edu/eeo> (<https://www.hccs.edu/eeo>)

### Ability 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 <https://www.hccs.edu/accessibility> (<https://www.hccs.edu/accessibility>)

### 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](mailto:Institutional.Equity@hccs.edu) (<mailto:Institutional.Equity@hccs.edu>)

<https://www.hccs.edu/titleix> (<https://www.hccs.edu/titleix>)

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

## 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 textbook
- Attending class in person and/or online
- Completing assignments
- Participating in class activities

There is no short cut for success in this course; it requires reading (and probably re-reading) and studying the material using the course objectives as a guide.

## Canvas Learning Management System

Canvas is HCC's Learning Management System (LMS), and can be accessed at the following URL:

<https://eagleonline.hccs.edu> (<https://eagleonline.hccs.edu>)

HCCS Open Lab locations may be used to access the Internet and Canvas. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades.

## HCC Online Information and Policies

Here is the link to information about HCC Online classes, which includes access to the required Online Information Class Preview for all fully online classes: <https://www.hccs.edu/online/> (<https://www.hccs.edu/online/>)

## Scoring Rubrics, Sample Assignments, etc.

Look in Canvas for the scoring rubrics for assignments, samples of class assignments, and other information to assist you in the course. <https://eagleonline.hccs.edu/> (<https://eagleonline.hccs.edu/>)

## 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 during office hours, and before and after class as required

As a student, it is your responsibility to:

- Attend class in person and/or online
- 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 \(https://www.hccs.edu/studenthandbook\)](https://www.hccs.edu/studenthandbook)

## Sensitive or Mature Course Content

In this college-level course, we may occasionally discuss sensitive or mature content. All members of the classroom environment, from your instructor to your fellow students, are expected to handle potentially controversial subjects with respect and consideration for one another's varied experiences and values.

## EGLS3

The EGLS<sup>3</sup> ([Evaluation for Greater Learning Student Survey System \(https://www.hccs.edu/egls3\)](https://www.hccs.edu/egls3)) 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. EGLS<sup>3</sup> surveys are only available for the Fall and Spring semesters. -EGLS3 surveys are not offered during the Summer semester due to logistical constraints.

<https://www.hccs.edu/egls3> (<https://www.hccs.edu/egls3>)

## Housing and Food Assistance for Students

If you are experiencing any hardship related to food, shelter, mental health, or other basic needs areas, please visit the Basic Needs page for resources (<https://www.hccs.edu/cares> (<https://www.hccs.edu/cares>)). You have the option to take the Basic Needs Questionnaire and ask to be contacted by a counselor for additional assistance or support (<https://www.hccs.edu/basicneeds> (<https://www.hccs.edu/basicneeds>)). Furthermore, please notify the professor if you are comfortable doing so.

## Student Resources

### Tutoring

HCC provides free and convenient academic support, in a large variety of subjects, to HCC students in both an online environment and in-person on campus. Tutoring is provided by HCC personnel in order to ensure that it is appropriate. Visit the HCC Tutoring Services website for more information at <https://hccs.edu/tutoring> (<https://hccs.edu/tutoring>).

### 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 <https://library.hccs.edu> (<https://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 <https://www.hccs.edu/supplemental-instruction> (<https://www.hccs.edu/supplemental-instruction>)

### Resources for Students:

<https://www.hccs.edu/covid19students> (<https://www.hccs.edu/covid19students>)

### Basic Needs Resources:

<https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/> (<https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/>)

### Student Basic Needs Application:

<https://www.hccs.edu/basicneeds> (<https://www.hccs.edu/basicneeds>)

# COVID-19

Here's the link to the HCC information about COVID-19:

<https://www.hccs.edu/covid-19> (<https://www.hccs.edu/covid-19>)

## Instructional Modalities

### In-Person (P)

Safe, face-to-face course with scheduled dates and times

### Online on a Schedule (WS)

Fully online course with virtual meetings at scheduled dates and times

### Online Anytime (WW)

Traditional online course without scheduled meetings

### Hybrid (H)

Course that meets safely 50% face-to-face and 50% virtually

### Hybrid Lab (HL)

Lab class that meets safely 50% face-to-face and 50% virtually

## Copyright Statement

In order to uphold the integrity of the academic environment and protect and foster a cohesive learning environment for all, HCC prohibits unauthorized use of course materials. Materials shared in this course are based on my professional knowledge and experience and are presented in an educational context for the students in the course. Authorized use of course materials is limited to personal study or educational uses. Material should not be shared, distributed, or sold outside the course without permission. Students are also explicitly forbidden in all circumstances from plagiarizing or appropriating course materials. This includes but is not limited to publically posting quizzes, essays, or other materials. This prohibition extends not only during this course, but after. Sharing of the materials in any context will be a violation of the HCC Student Code of Conduct and may subject the student to discipline, as well as any applicable civil or criminal liability. Consequences for unauthorized sharing, plagiarizing, or other methods of academic dishonesty may range from a 0 on the specified assignment and/or up to expulsion from Houston Community College. Questions about this policy may be directed to me or to the Manager of Student Conduct and Academic Integrity.

## Unauthorized Disclosure

"Unauthorized disclosure" occurs when any student provides instructional materials and/or assessments to other students in violation of a clear prohibition by the instructor. Examples include: posting assessment items to online sites such as Chegg or CourseHero; asking exam questions in forums like Reddit or Yahoo Answers; discussions of confidential question using Wechat or GroupMe, etc.

## Course Calendar

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### 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.

#### Course Calendar:

This is a rough outline of the expected course content. Anything and everything is subject to change. A "Q" in front of a homework problem denotes the problem is in the "Questions" section at the end of each chapter, otherwise all problems come from the "Problems" section at the end of each chapter. Late homework is accepted but at half credit.

Date	Topic	Chapter	Homework
1/18	Introduction, Units	1	Hwk 1: due 1/25 Ch.1: 3, 12, 15, 21, 23, 41, 56
1/23	Position, Velocity, Acceleration	2	
1/25	Motion in 1D	2	Hwk 2: due 2/1 Ch.2: 1, 5, 11, 15, 25, 28, 44, 48, 49, 54a
1/30	Vectors	3	Hwk 3: due 2/6 Ch.3: Q2, 3, 7, 13, 17, 22, 23, 27
2/1	Motion in 2D	4	Hwk 4: due 2/8 Ch.4: Q5, Q17, 3, 16, 22, 28, 31, 43, 90
2/6	Newton's Laws	5	Hwk 5: due 2/13 Ch.5: Q3, 3, 7, 17, 29, 34, 45, 49, 57, 72
2/8	Friction	6	
2/13	Circular Motion	6	Hwk 6: due 2/15 Ch. 4: 56, 59 Ch.6: 6, 13, 16, 19, 25, 27, 42, 43, 51, 70
2/15	Review 1		
2/20	No Class		
2/22	Exam 1	Ch. 1 – 6	
2/27	Work and Energy	7	Hwk 7: due 3/6 Ch.3: 41 Ch.7: Q3, 2, 8, 14, 18, 19, 24, 27, 31, 35, 55
3/1	Conservation of Energy	8	Hwk 8: due 3/8 Ch.8: Q5, 3, 7, 18, 24, 31, 55, 86, 97, 100
3/6	Momentum and Impulse	9	

3/8	Collisions	9	Hwk 9: due 3/22 Ch.9: Q3, 2, 7, 19, 25, 26, 51, 54, 60, 68, 74, 86
3/13	No Class		
3/15	No Class		
3/20	Rotational Kinematics	10	
3/22	Rotational Dynamics	10	Hwk 10: due 3/27 Ch.10: 1, 4, 10, 11, 22, 25, 35, 38, 43, 51, 71, 81, 84
3/27	Review 2		
3/29	Exam 2	Ch. 7 – 10	
4/3	Rolling motion	11	
4/5	Angular Momentum	11	Hwk 11: due 4/10 Ch.11: Q5, 2, 9, 21, 24, 25, 28, 37, 38, 44, 51, 60
4/10	Static Equilibrium	12	Hwk 12: due 4/12 Ch.12: Q7, 10, 17, 20, 23, 28, 64, 68
4/12	Gravitation	13	Hwk 13: due 4/17 Ch.13: Q4, 3, 6, 17, 31, 36, 43, 53, 61, 63, 85
4/17	Fluids	14	Hwk 14: due 4/19 Ch.14: 3, 6, 10, 14, 28, 32, 35, 52, 59, 64, 77
4/19	Oscillatory Motion	15	Hwk 15: due 4/24 Ch.15: Q8, 6, 9, 17, 29, 30, 33, 42, 47, 58
4/24	Review 3		
4/26	Exam 3	Ch. 11 – 14	
5/1	Temperature and Heat	18	Hwk 16: due 5/3 Ch. 18: Q11, 4, 10, 17, 23, 27, 28, 31, 36, 43, 44, 75

5/3	Final Review		Last day to submit late homework!
5/8	Final Exam	Ch. 1 –15, 18	

## Additional Information

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### Departmental/Program Information

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### Process for Expressing Concerns about the Course

If you have concerns about any aspect of this course, please reach out to your instructor for assistance first. If your instructor is not able to assist you, then you may wish to contact the Department Chair.

### NATURAL SCIENCES DEPARTMENT ADMINISTRATION

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