



## PHY-113: Physics I Syllabus

Course Title: Physics I    Course Number: PHY-113    Credits: 4  
Pre-requisite(s): MAT 100, or MAT 106, or MAT 107 or MAT 110  
Meeting Times: \_\_  
Meeting Room: \_\_\_\_\_  
Instructor: \_\_\_\_\_  
Office Hours: \_\_\_\_\_    Office Location: \_\_  
E-mail: \_\_\_\_\_    Telephone: \_\_\_\_

**Course Description:** This is the first of a two-course sequence in introductory physics that deals with mechanics. Topics include measurements, vectors, simple kinematics of uniformly accelerating bodies, projectile and circular motion, energy, power, and simple rotational dynamics. This is an algebra-based course

### **Students' Learning Outcomes/ Objectives (SLO)**

*Upon successful course completion students will be able to:*

1. Apply scientific methods of inquiry and analyze problems in introductory physics and explain and report their outcome
2. Explain the role of physical science and technology in society
3. Demonstrate an understanding of the fundamentals of classical mechanics
  - Differentiate and properly categorize the scalar and vector physical qualities.
  - Explain and illustrate the basic principles behind Newton's laws of motion.
  - Define work, kinetic and potential energy, impulse, and momentum (linear and angular).
  - Discuss and provide examples of conservation of energy and momentum.

- Demonstrate skills in handling of lab equipment and performing relevant lab experiments.
  - Use library skills to prepare reports on course-related topics and to supplement the text.
4. Communicate findings using accurate scientific terminology in written and/or oral form in order to solve problems and interpret found results
  5. Correctly and safely use laboratory equipment and procedures

## **Text: Douglas Giancoli, Physics: Principles with Applications 7<sup>th</sup> edition, 2014**

Background readings and other materials:

1. Fundamental of Physics Extended Halliday, David and Resnick, Robert. John Wiley and Sons.
2. Feynman, Richard P., Leighton, Robert B. And Sands, Matthew The Feynman Lectures of Physics.

### **Course Outline:**

**(Exams & Labs schedules are based on material covered in class)**

#### **Topics**

1. Introduction, Measurement, Estimating (SLO 1, 3)
  2. Kinematics in one dimension (SLO 1, 2, 3)
  3. Kinematics in two dimensions; Vectors (SLO 1,2, 3, 4,5)
- Exam # 1**
4. Newton's First, Second, and Third Laws (SLO 1,2, 3, 4)
  5. Circular Motion, Gravitation (SLO 1,2, 3, 4,5)
  6. Work Energy (SLO 1,2, 3, 4)
- Exam # 2**
7. Linear Momentum (SLO 1,2, 3, 4)
  8. Rotational Motion (SLO 1,2, 3, 4)
- Exam # 3**
9. Static Equilibrium; Elasticity and Fracture (SLO 1,2, 3, 4)
  10. Fluids

## Final Exam

Physics Lab (may adjust to material covered in class and available material)

<b>Week:</b>	<b>PHY113</b>
1	Lab Safety Data Analysis Measurement Excel
2	Vectors, Force Table
3	Spring Constant
4	Static and Kinetic Friction
5	Freefall and Projectile motion
6	Atwood Machine Newton's second law
6	Conservation of Energy & Momentum
8	Rotational Motion and Centripetal Force
9	Rotational Static Equilibrium and Torques
10	The density of fluids and Buoyancy Force

### Assessment

Projects and lab reports	25%
Exams: There are three in-class exams	45%
Final: Cumulative final exam	30%

<b>FINAL AVERAGE</b>	<b>GRADE</b>	<b>FINAL AVERAGE</b>	<b>GRADE</b>
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<b>92 – 100</b>	<b>A</b>	<b>75 – 77</b>	<b>C+</b>
<b>88 – 91</b>	<b>A–</b>	<b>70 – 74</b>	<b>C</b>
<b>85 – 87</b>	<b>B+</b>	<b>60 – 69</b>	<b>D</b>
<b>82 – 84</b>	<b>B</b>	<b>0 – 59</b>	<b>F</b>
<b>78 – 81</b>	<b>B–</b>		

- **ATTENDANCE POLICY:**

Students may be dropped after 3 absences. Regular attendance is crucial to doing well in the course. All cell phones should be turned OFF. If a student expects an emergency call, clear it with me before class. If a cell phone rings during class, the student will be asked to leave for the remainder of the class. No food or drinks are to be used except bottled water. Students are expected to follow attendance guidelines as presented in the syllabus provided by the instructor. However, in case of an emergency or illness, students are advised to notify their instructor or counselor immediately. The instructor will determine the validity of the absence. The exceptions to instructor discretion exist when members of the armed forces are called for training or assignment or in any case where students are legally required to be elsewhere. Pending the submission of appropriate documentation reasonable accommodations for make-up work shall be provided, and in accordance with guidelines included in the syllabus.

- **ACCESSIBILITY SERVICES STATEMENT: :**

Students with disabilities who believe that they might need accommodations in this class are encouraged to contact Counselor/Coordinator, and Disability Support Services at (201) 360-4157, as soon as possible to better ensure that such accommodations are implemented in a timely fashion. All disabilities must be documented by a qualified professional such as a Physician, Licensed Learning Disabilities Teacher Consultant (LDTC), Psychiatrist, Psychologist, Psychiatric Nurse, Licensed Social Worker or Licensed Professional Counselor, who is qualified to assess the disability that the student claims to have and make recommendations on accommodations for the student. All information provided to the Disability Support Services Program will be confidential between the program, professors involved with the student, and individual students.

- **ACADEMIC INTEGRITY STATEMENT:**

#### Academic Integrity Standards

Academic integrity is central to the pursuit of education. For students at HCCC, this means maintaining the highest ethical standards in completing their academic work. In doing so, students earn college credits through their honest efforts. When they are awarded a certificate of

degree, they have attained a goal representing genuine achievement and can reflect with pride on their accomplishment. This is what gives college education its essential value.

Violations of the principle of academic integrity include:

Cheating on exams

Reporting false research data or experimental results

Allowing other students to copy one's work to submit to instructors

Communicating the contents of an exam to other students who will be taking the same test

Submitting the same project in more than one course, without discussing this first with the instructor

Submitting plagiarized work. Plagiarism is the use of another writer's words or ideas without properly crediting that person. This unacknowledged use may be from published books or articles, the Internet, or another student's work

When students act dishonestly in meeting their course requirements, they lower the value of education for all students. Students who violate the college's policy on academic integrity are subject to failing grades on exams or projects, or for the entire course. In some cases, serious or repeated instances of academic integrity violations may warrant further disciplinary action.

#### Hudson County Community College Classroom Recording Policy

- Hudson County Community College prohibits the audio-visual recording, transmission, and distribution of classroom sessions. Classes may only be recorded with the advance written permission of the instructor. The Hudson County Community College classroom recording policy must be listed in all syllabi.
- All classroom recordings can only be used for academic purposes by students enrolled in that class. Recordings may not be shared, reproduced, or uploaded to public websites or other mediums, and these recordings may contain copyrighted material and are prohibited from any form of commercial use.
- All students and guests must be informed that the class may be recorded. Due to issues related to privacy and the possible inhibition of student participation, instructors should be mindful of the effects of permitting classroom recording.
- Instructors should retain electronic or paper copies of their written consent to grant classroom recordings.
- Students must destroy their recordings at the end of the semester.
- Students who are granted permission to record their class by the office of Disability Support Services should inform the instructor beforehand and are subject to the policies outlined in this document.

- Violation of this policy is subject to disciplinary action listed under the code of conduct as included in the Student Handbook. Instructor Classroom Recording Policy
- Instructors may record their classes if students are informed in writing in advance that recording will take place. Instructors may distribute their own lectures, but this must be limited to the lecture portion of the class. Recordings of student presentations or activities may be used in the class if the students are notified in advance of the recording. Recordings of student presentations or activities may not be distributed in any way without the advance written consent of the students. This should be included in all syllabi: Hudson County Community College prohibits the audio-visual recording, transmission, and distribution of classroom sessions. Classes may only be recorded with the advance written permission of the instructor. The complete classroom recording policy is listed in the student handbook.

Successful people access support from others when needed. Hudson County Community

College has many supportive services available to help you meet your goals. You are encouraged to contact your instructors or other professionals on campus. Below are resources available to you.

**IN AN EMERGENCY, PLEASE CONTACT SECURITY or 911.**

	<b>Journal Square Campus</b>	<b>North Hudson Campus</b>
<b><u>Counseling Services</u></b> <a href="mailto:counseling@hccc.edu">counseling@hccc.edu</a>	201-360-4150 A Building, Floor 2 <a href="https://myhudson.hccc.edu/advisement">https://myhudson.hccc.edu/advisement</a>	201-360-4150 Enrollment Center, Floor 1 <a href="https://myhudson.hccc.edu/advisement">https://myhudson.hccc.edu/advisement</a>
<b>The National Suicide Prevention Lifeline: 1-800-273-8255</b> <b>Crisis Text Line: Text HELLO to 741-741</b>		
<b><u>Advising Services</u></b> <a href="mailto:advising@live.hccc.edu">advising@live.hccc.edu</a>	201-360-4150 A Building, Floor 2 <a href="https://myhudson.hccc.edu/advisement">https://myhudson.hccc.edu/advisement</a>	201-360-4150 Enrollment Center, Floor 1 <a href="https://myhudson.hccc.edu/advisement">https://myhudson.hccc.edu/advisement</a>
<b><u>Career Development</u></b> <a href="mailto:career@hccc.edu">career@hccc.edu</a>	201-360-4181 A Building, Floor 3 <a href="https://myhudson.hccc.edu/career-development">https://myhudson.hccc.edu/career-development</a>	201-360-4181 Floor 2, Room 204 <a href="https://myhudson.hccc.edu/career-development">https://myhudson.hccc.edu/career-development</a>
<b><u>Disability Support Services</u></b> <a href="mailto:dss@hccc.edu">dss@hccc.edu</a>	201-360-4157/4163 A Building, Floor 2 <a href="https://myhudson.hccc.edu/dss">https://myhudson.hccc.edu/dss</a>	201-360-4157/4163 Enrollment Services, Floor 1 <a href="https://myhudson.hccc.edu/dss">https://myhudson.hccc.edu/dss</a>
<b><u>Library</u></b> Journal Square <a href="mailto:librarian@hccc.edu">librarian@hccc.edu</a> North Hudson <a href="mailto:librarynhc@hccc.edu">librarynhc@hccc.edu</a>	201-360-4360 L Building, Floor 1 <a href="http://www.hccclibrary.net/">http://www.hccclibrary.net/</a>	201-360-4605 Floor 3 <a href="http://www.hccclibrary.net/">http://www.hccclibrary.net/</a>
<b><u>Tutoring Center</u></b> <a href="mailto:tc@hccc.edu">tc@hccc.edu</a>	201-360-4187 Lower Level of Library Building <a href="https://myhudson.hccc.edu/tutoring">https://myhudson.hccc.edu/tutoring</a>	201-360-4623 Floor 5, Room 511 <a href="https://myhudson.hccc.edu/tutoring">https://myhudson.hccc.edu/tutoring</a>
<b><u>Writing Center</u></b> <a href="mailto:wc@hccc.edu">wc@hccc.edu</a>	201-360-4370 J Building, Room 204 <a href="https://myhudson.hccc.edu/tutoring">https://myhudson.hccc.edu/tutoring</a>	201-360-4779 Floor 7, Room 703A <a href="https://myhudson.hccc.edu/tutoring/">https://myhudson.hccc.edu/tutoring/</a>