COURSE DESCRIPTION: This is the first semester of an algebra and trigonometry-based fundamentals of physics sequence. The principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton’s Laws of Motion, and gravitation and other fundamental forces are studied with emphasis on problem solving. Laboratory experiments supporting the topics are included. This is an online class. Both the lecture and the lab are online.

Prerequisite Required: MATH 1314 and MATH 1316 or MATH 2412. College level ready in Reading.

TIME & PLACE: LECTURE: INET (online) LAB: INET (online)

TEXTBOOK & MATERIALS:

Important: Students who are part of the IncludED program do not need to purchase any learning materials unless directed by the instructor.

STUDENT LEARNING OUTCOMES: Upon successful completion of the course, the students will:
  ➢ Convert units by using conversion factors and unit analysis
  ➢ Distinguish between vector and scalar quantities
  ➢ Use the equations of motion with constant acceleration in one and two dimensions
  ➢ State Newton’s laws of motion and the law of universal gravitation
  ➢ Resolve vector diagrams on static and dynamical systems.
  ➢ Define and use the concepts of energy and momentum
  ➢ Use the equations of angular motion with constant angular acceleration.
  ➢ Define and use the concepts of pressure, density, and the ideal gas law.
  ➢ Define and use the concepts of density, pressure exerted by a fluid, and the buoyant force.
Define and use the first and second laws of thermodynamics.

**HOMEWORK:** There will be homework every week. You will turn in the homework using the MasteringPhysics, an online homework system. A brief MasteringPhysics user guide is attached along with this syllabus and also posted on eCampus for reference. Each homework will usually be a combination of conceptual and quantitative problems relating to the material from the previous lectures. Over the course of the semester the homework will amount to 20% of the grade.

It is important to complete the homework to obtain a good understanding of the material covered (and to practice so you can do well on the exams). You are encouraged to work with others on the homework. However, you are discouraged from letting others do the work and then copying what they did, or you doing the work and letting others copy. The instructor has observed that for the most part successful students pay particular attention to the assigned homework and devote considerable effort to it. Feel free to visit the Instructor whenever you may need assistance with the homework.

**VIRTUAL CLASSROOM:** Virtual Classroom link on eCampus course page allows you to participate in course related discussions online, at any time of the day or night, with no need for the participants to be logged into the site at the same time. The discussion is recorded on the course site for all to review and respond at their convenience. Feel free to post your questions in this forum. Anyone in class can respond to the questions and or create new threads. If you have any questions for the instructor, please also email at SaeedAhmad@dcccd.edu and I will respond back within 24 hours during the working days (Monday to Friday).

Please post your short introduction, your name, your major and (optionally) anything else about yourself that you would like to share with the rest of the class, in the thread **Introductions** under Virtual Classroom by 5:00 pm on Saturday, September 5th. This introduction will count towards your class attendance for financial aid purposes and is also worth 1% extra credit.

**LAB:** See the instructions above under “Textbook & Materials” on how to order the lab kit and to sign up for an account following the information provided on eCampus. You will submit all the lab data, and answers to the lab questions from this account. Over the course of the semester the lab work will amount to 20% of the grade.

**COURSE SCHEDULE:** See eCampus for suggested weekly schedule of course topics, labs, and exams.

**LATE WORK POLICY:** If you are not able to finish homework on time due to some emergency/illness, contact the instructor as soon as you can, and the instructor may give you extra time to complete the homework. Final grade is FINAL, no work may be handed in for additional credit after the final exam.

**EXAMS:** There will be three exams. All exams will be counted.

**Note:** Make-up exams are not given except when a College acceptable excuse (i.e. illness warranting a physician’s care, death in the immediate family, religious absences, and sanctioned college athlete’s events) is supplied with documentation prior to the exam. Final grade is FINAL, no work may be handed in for additional credit after the final exam.
GRADING

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<tr>
<th>Course Component</th>
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<tbody>
<tr>
<td>Homework</td>
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<td>Lab</td>
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<td>Exam I</td>
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GRADING SCALE: A: 90 – 100   B: 80 – 90   C: 70 – 80   D: 60 – 70
A grade of F will be assigned to anyone who has below a 60% OR to anyone caught cheating in this course.

LAB GRADE: This course satisfies the core curriculum requirement for scientific discovery and sustainability. A minimum lab average of 60 is required in order to pass the course. If your lab average is below 60, regardless of your course average, your course grade will be changed to be equal to your lab average.

Having trouble? Your professor should be your first line of defense when you are having trouble. Other resources include:

- your classmates (form a study group!)
- the Tutoring Center.

ACADEMIC INTEGRITY AND PLAGIARISM

Scholastic dishonesty, also known as academic dishonesty or misconduct, is the defined by the DCCCD Student Code of Conduct as acting in an unethical, dishonest manner. It includes, but is not limited to: cheating; plagiarism; falsifying or fabricating information; misrepresentation; facilitating scholastic dishonesty; and collusion.

Potential Consequences: DCCCD takes acts of scholastic dishonesty very seriously. Students who commit these offenses could: fail the assignment; fail the course; and/or be suspended or expelled from the college.

The Instructor reserves the right to change the syllabus at a later time. If that happens, an updated copy of the syllabus will be posted on eCampus.