

Collage physics

Summer2022

Instructor: Safana Ismael

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Classes: MTWThF 9:00-10:00 AM Office hours: MTH, 2:30-3:30 PM (Zoom)

Description: Beginning course for students without a calculus background. Includes basic principles of bodies at rest and in motion, fluids, vibrations, waves, sound, and thermodynamics.

Goal: This course aims to provide the students with an understanding of the basic principles of classical mechanics.

Prerequisites: MATH 105 (Trigonometry) or higher, or consent of instructor

Textbook: Nicholas J. Giordano, College Physics, Reasoning and Relationships 2nd edition, (Brooks/Cole, Cengage Learning), Chapters 1-13

LON-CAPA: This course does not use Blackboard. Instead, the LON-CAPA course management system will be used to post homework, lecture notes, grades, and other information. LON-CAPA can be accessed by selecting the appropriate server at [http://www.ndsu.edu/physics/lon capa/](http://www.ndsu.edu/physics/lon%20capa/). Your username is everything to the left of the @ in your NDSU email address (use all lowercase letters). For example, if your email address is Sheldon.Cooper.2@ndsu.edu, then your LON-CAPA username is sheldon.cooper.2. Initially, you create your own password by following the link "Forgot Password." For help using LON-CAPA, contact your instructor or laboratory technician, Paul Omernik (SE110, Paul.Omernik@ndsu.edu, 231-7047)

Course schedule

Date	Material	Task
Week1 5/17-5/20	review of math(vector/trig/unit), introduction to newton's law	HW1
Week2 5/23-5/27	1D motion and force, 2D,3D motions	HW2/EXAM1 (30min)
Week3 5/30-6/03	Circular motion(G-force), work, momentum, and conservation of energy, collision	HW3/EXAM2 (30min)
Week4 6/06-6/10	Rotational motion (torque/moment of inertia /momentum/energy)	HW4/EXAM3 (30min)
Week5 6/13-6/17	Fluid (pressure/density/motion in fluid)	HW5/ EXAM4 (30min)
Week6 6/20-6/24	introduction to SHM (spring/wave)	HW6/EXAM5 (30min)

Week7 6/27-7/01	Wave	HW7/EXAM6 (30min)
Week8 7/4-7/8	Final exam	FINAL EXAM

Exam: There are 6midterm and 1 final exam for this course. Each midterm is 30min long with five questions each (all multiple choice; 3 conceptional problems 2 minor calculation problems), And the lowest two scores on the midterm will drop. All exams are open notes (i.e., the lecture notes and textbook are permitted during an exam). A calculator will be required to complete the exams successfully; all other electronic devices must be turned off and stored.

Grading: Grading will be based on LON-CAPA homework score (max. 100 points), exams (max. $5 \times 20 = 100$ points), and class activities (max.15points). From the actual number of points and the maximal number ($100+100+20 = 200$ points + possible 15 points as extra credits) the percentage will be calculated and used to grade according to: 0% - 55.0% F, 55.0% - 66.0% D, 66.0% - 77.0% C, 77.0% - 88.0% B, 88.0% -100% A. Expressed in points, this corresponds to: 0 - 109 F, 110 - 131 D, 132 - 153 C, 154 - 175 B, 176 - 200 A. Notice that the grade calculation is based on a total of 200 points. The extra 15 points are a class contribution. Extra credits will give you a possible boost to your final grade. Grades will not be curved, and any shift in grade boundaries will be only in your favor.

Special Considerations Students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor as soon as possible. Extra time on exams must be requested by a formal letter from the NDSU Department of disability services and administered through that department. Veterans and student soldiers with special circumstances or who are activated are encouraged to notify the instructor in advance.

Academic Responsibility: All work in this course must be completed in a manner consistent with NDSU University Senate Policy, section 335: Code of Academic Responsibility and Conduct.