Instructor: Dr. Landon Bladow
Office: South Engineering 201
Office Phone: 231-5780
Email: Landon.Bladow@ndsu.edu
Office Hours: 11:00 AM – 12:00 PM MW, 1:30 PM – 2:30 PM W, or by appointment

Class Schedule: 10:00 AM – 10:50 AM MWF, Gate City Bank Auditorium

Course Materials (available at NDSU Bookstore):
(2) Scientific or graphing calculator.
(3) Four scantron/opscan sheets and a #2 pencil.
(4) Optional: Student Companion & Problem-Solving Guide (by R. Grant).

Prerequisite: MATH 105 – Trigonometry (or higher).

Course 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.

Course Objectives: The primary goal of this course is to provide the students with an understanding of the basic principles of classical mechanics that will aid them in their everyday lives and careers as informed members of society and in other courses. The students should attain a conceptual understanding and problem-solving ability such that they can readily apply their knowledge to novel problems and situations.

General Education: This course has been approved for the Science and Technology category of the General Education requirements.

Course Format: The class will involve traditional lecture, along with some discussion and problem solving. Feel free to ask questions at any time during class. The Blackboard online course management system (http://bb.ndsu.nodak.edu) will be used to post course announcements, lecture notes, grades, and other information; please check the website often for updates.

Grading Policies: Grades will be assigned based on the following scheme: A ≥ 89.5%, 79.5% ≤ B < 89.5%, 69.5% ≤ C < 79.5%, 59.5% ≤ D < 69.5%, F < 59.5%. The instructor reserves the right to lower the grade cutoffs in response to class performance, but they will not be raised. However, significant curving of grades should not be expected. Your course grade will be based upon the number of points you have earned out of the 725 points possible, as shown below.
### Component Points Possible Relative Percentage

<table>
<thead>
<tr>
<th>Component</th>
<th>Points Possible</th>
<th>Relative Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit Exams</td>
<td>300 (2 × 150)</td>
<td>41.4% (2 × 20.7%)</td>
</tr>
<tr>
<td>Final Exam</td>
<td>250</td>
<td>34.5%</td>
</tr>
<tr>
<td>Homework</td>
<td>175</td>
<td>24.1%</td>
</tr>
<tr>
<td>Total</td>
<td>725</td>
<td>100.0%</td>
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**Unit Exams:** Three in-class “midterm” exams will be given, each of which will be based primarily on material covered since the last exam, but certain questions may require previous concepts. Each exam will be multiple-choice in format, consisting of a mix of conceptual and computational problem-based questions. A calculator will be required for successful completion of the exams; all other electronic devices must be turned off and stored. The use of calculator software in cell phones, translators, laptop computers, etc., is not permitted on an exam. A sheet containing relevant formulas will be provided with each exam. Any changes to the exam dates listed below will be announced well in advance of each exam. Your lowest of the three unit exam scores will be dropped. Bring a **#2 pencil, photo ID, calculator, and scantron sheet** for each exam.

**Make-Up Policy:** **No make-up exams are allowed,** so if you miss a unit exam, it will automatically be dropped as your lowest scored exam. If you are absent for more than one exam, you should meet with the instructor as soon as possible (prior to the exam, if possible) to provide documentation of the reason for your absence and to determine how to proceed; this will be handled on a case-by-case basis. Exams may be taken early, subject to the instructor’s discretion.

**Final Exam:** The final exam will be comprehensive and will be held during Finals’ Week. The final exam cannot be dropped. A make-up of the final exam will not be allowed unless extreme, documented circumstances warrant it.

**Homework:** Homework problem sets on current course material will be assigned via the LON-CAPA online homework system. There will be a problem set for each chapter, typically assigned after completion of the chapter material and due one week later. **No late homework will be accepted.** You may work together on homework sets, but do not simply copy another’s answers; this will not benefit you when it comes to the exams or in real life applications. There will be approximately 225 homework problems available during the semester, but you only need to correctly answer 175 of them to receive full credit on the homework. The remaining problems will not count for extra credit, but you are strongly encouraged to complete them in order to prepare yourself for the exams.

**LON-CAPA Instructions:** The online homework can be accessed by selecting the appropriate server at [http://www.ndsu.edu/physics/lon_capa/](http://www.ndsu.edu/physics/lon_capa/). Your username is everything to the left of the @ in your NDSU email address (use all lowercase letters), and you will establish a password by selecting the “Forgot password?” link when you first log in to the system. During this process, do not include the “my” when it requests your email address. For help using LON-CAPA, please contact your instructor as soon as possible. A $5 course fee is assessed for LON-CAPA server upgrades and maintenance.
How to Succeed: Success in physics requires a good deal of work to stay current with the material – don’t fall behind! Attending class, reviewing your lecture notes, reading the textbook, taking part in class discussions, and doing homework (and additional) problems are keys to success. If you’re having trouble following along, feel free to ask questions in class or during office hours. If desired, review sessions can be held prior to exams. Also feel free to ask the instructor any questions about grading. Free individual tutoring is available in the Physics Department tutor room (South Engineering 322) and from NDSU’s ACE program (http://www.ndsu.edu/studentsuccess/tutoring_schedule/). Please use one of the tutoring resources if you have a large number of questions.

Special Needs: Any students with disabilities or other special needs who require special accommodations in this course are invited to share these concerns or requests with the instructor and contact the Disability Services Office as soon as possible.

Academic Responsibility: The academic community is operated on the basis of honesty, integrity, and fair play. NDSU Policy 335: Code of Academic Responsibility and Conduct applies to cases in which cheating, plagiarism, or other academic misconduct has occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the Office of Registration and Records. Informational resources about academic honesty for students and instructional staff members can be found at http://www.ndsu.edu/academicichonesty. Cheating in any way on any coursework will not be tolerated.

Topic Outline: The chapters in the textbook to be covered in this course are listed below, along with the tentative exam dates. We may jump around a bit, and we will not cover every section in every chapter.

Chapter 1 – Physics, measurement, units, unit conversion, vectors
Chapter 2 – One-dimensional, projectile, & relative motion
Chapter 3 – Forces, Newton’s laws of motion

Exam I – Wednesday, October 2
Chapter 4 – Friction & drag forces
Chapter 5 – Circular motion, gravitation, Kepler’s laws
Chapter 6 – Work, kinetic energy, potential energy, conservation of energy, power

Exam II – Wednesday, November 6
Chapter 7 – Center of mass, linear momentum & its conservation, impulse, collisions
Chapter 8 – Rotational motion, torque, static equilibrium, moment of inertia, rolling
Chapter 9 – Energetics of rotation, angular momentum & its conservation

Exam III – Wednesday, December 4
Chapter 11 – Oscillations: simple harmonic motion, pendulums, elasticity
Chapters 12-13 – Waves [time permitting]
Chapter 10 – Fluids [time permitting]
Chapters 14-16 – Thermodynamics [time permitting]

Final Exam – Monday, December 16 (8:00 AM – 10:00 AM)

PHYS 211L: The laboratory companion to this class is considered a separate course. Students taking the lecture course are not required to enroll in the lab course. The first meetings of PHYS 211L will be held the week of September 2.

**The instructor reserves the right to adjust or modify this syllabus if it is deemed beneficial to student learning.**