Instructor: Dr. Todd A. Wells  
Physics, Room 205  
Email: towells@du.edu


Lectures: 920-11:20 a.m., MTWRF, BA 102  
Lab: 12:00PM-3:00PM, MTWR, Olin 225

Quizzes/Exams: There are 4 quizzes during the summer, plus a two-hour cumulative final exam. Each quiz counts 50 points. Quiz/Exam problems will be similar to the problems assigned as homework and the problems worked in class. If you miss an hour exam, then your final exam will be counted twice and replace the missed hour exam. You must inform your instructor of this prior to the exam and make arrangements at that time for a makeup exam. **Your lowest quiz grade will be dropped.**

Homework: Each lecture has a group of homework problems assigned to it. The problems are taken from the Problems section at the end of each chapter, and are chosen to prepare you for the quizzes/exams. You must complete the homework on Norton’s online site Smartworks.com. If you understand and can do all the homework, you probably will do well on the quizzes/exams. There are many additional problems at the end of each chapter, grouped according to subject area. It is a good idea to work some of these extra problems in the areas where you are having difficulties. To get the most benefit from homework, you should **do the assignments on schedule.** While homework other than Smartworks will not be graded, it is important to keep up with these assignments!

Grading: Your final grade is based on a maximum of 450 points, distributed as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes (100 points each)</td>
<td>200</td>
</tr>
<tr>
<td>Online Homework</td>
<td>100</td>
</tr>
<tr>
<td>Final exam</td>
<td>150</td>
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The assignment of a letter grade (A, B, C, etc.) to a given numerical grade is a somewhat flexible procedure and depends on the overall class performance. Grades, however, will not be fitted to a statistical bell-shaped normal distribution. If the overall class performance is high, it is possible to have a distribution with predominantly A’s and B’s and relatively few lower grades.
TOPICS COVERED

QUANTUM-MECHANICAL MODEL OF THE ATOM
  Introduction / Atomic spectra
  Quantum-Mechanical Model
  Many-Electron Atoms

CHEMICAL PERIODICITY
  Periodic Table
  Atomic Properties
  Chemical Reactivity

CHEMICAL BONDING AND MOLECULAR SHAPE
  Ionic Bonding
  Covalent Bonding
  Lewis Structures
  VSEPR Theory
  Bond and Molecular Polarity
  Valence Bond Theory
  Types of Covalent Bonds
  Molecular Orbital Theory

CHEMICAL REACTIONS
  Water as a Solvent
  Precipitation and Acid-Base Reactions
  Acids, bases and pH
  Oxidation-Reduction Reactions
  Balancing Redox Reactions
  Voltaic cells and cell potential

 THERMOCHEMISTRY AND THERMODYNAMICS
  Enthalpy
  Calorimetry
  Heats of Reaction
  Entropy
  Free Energy