<table>
<thead>
<tr>
<th>Homework due:</th>
<th>Lecture topic(s)</th>
<th>Book sections</th>
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<td>(Knight 3&lt;sup&gt;rd&lt;/sup&gt; ed.)</td>
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<tr>
<td><strong>Sep 3</strong></td>
<td>Course intro; Magnets</td>
<td>32.1-2</td>
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<td></td>
<td>Magnetic force on charged particles</td>
<td>32.7</td>
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<tr>
<td><strong>Sep 7</strong></td>
<td>Sep 8 Applications of magnetic force</td>
<td>32.8-9</td>
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<td></td>
<td>Sep 10 Generation of magnetic field: Biot-Savart law</td>
<td>32.3-5</td>
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<td>Sep 12 Calculation of magnetic field: Ampere’s law</td>
<td>32.6</td>
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<tr>
<td><strong>Sep 14</strong></td>
<td>Sep 15 Magnetic properties of materials</td>
<td>32.10+lecture</td>
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<td>Sep 17 Magnetically induced currents</td>
<td>33.1-3</td>
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<td>Sep 19 Faraday's Law and Lenz's Law</td>
<td>33.4-6</td>
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<td><strong>Sep 21</strong></td>
<td>Sep 22 Applications of induction; Transformers</td>
<td>33.7</td>
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<td></td>
<td>Sep 24 Inductance &amp; inductors; Review of circuits</td>
<td>33.8, Ch. 31</td>
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<td></td>
<td>Sep 26 RC, LC and LR circuits</td>
<td>31.9, 33.9-10</td>
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<td><strong>Sep 28</strong></td>
<td>Sep 29 RLC circuits; AC circuit fundamentals</td>
<td>35.1-4</td>
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<td>Oct 1 AC driven RLC circuits</td>
<td>35.5-6</td>
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<td>Oct 3 Discussion</td>
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<td><strong>Oct 5</strong></td>
<td>Oct 6 <strong>Exam 1</strong></td>
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<td>Oct 8 Maxwell’s equations</td>
<td>34.2-4</td>
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<td></td>
<td>Oct 10 Electromagnetic waves and their properties</td>
<td>34.5-7</td>
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<td><strong>Oct 12</strong></td>
<td>Oct 13 Foundations of relativity</td>
<td>34.1, 36.1-4</td>
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<td></td>
<td>Oct 15 Implications: time dilation, length contraction</td>
<td>36.6-7</td>
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<td>Oct 17 Lorentz transform; Addition of velocities</td>
<td>36.8</td>
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<td><strong>Oct 19</strong></td>
<td>Oct 20 Relativistic momentum and energy</td>
<td>36.9-10</td>
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<td>Oct 22 General relativity</td>
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<td>Oct 24 Light and reflections</td>
<td>23.1-2, 23.8</td>
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<td><strong>Oct 26</strong></td>
<td>Oct 27 Refraction and total internal reflection</td>
<td>23.3-4</td>
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<td>Oct 29 Lenses</td>
<td>23.6-7</td>
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<td>Oct 31 Discussion</td>
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<td><strong>Nov 2</strong></td>
<td>Nov 3 <strong>Exam 2</strong></td>
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<td>Nov 5 Optical assemblies</td>
<td>24.1-3</td>
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<td>Nov 7 Optical instruments</td>
<td>24.4-5</td>
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<td><strong>Nov 9</strong></td>
<td>Nov 10 Interference of light</td>
<td>22.1-2</td>
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<td>Nov 12 Diffraction</td>
<td>22.3-5</td>
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<td></td>
<td>Nov 14 Applications of interference and diffraction</td>
<td>22.6</td>
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<td><strong>Nov 16</strong></td>
<td>Nov 17 Breakdown of classical physics: radiation</td>
<td>37.1-2</td>
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<td>Nov 19 The photoelectric effect</td>
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<td>Nov 21 The wave nature of matter</td>
<td>38.4, 39.1-2, 39.5-6</td>
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<td><strong>Nov 23</strong></td>
<td>Nov 24 Schrödinger quantum mechanics</td>
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<td>Nov 26 Particles in potential wells</td>
<td>40.3-6</td>
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<td>Nov 28 <strong>Thanksgiving holiday — No class</strong></td>
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<td><strong>Dec 2</strong></td>
<td>Dec 1 Quantum harmonic oscillator; Tunneling</td>
<td>40.8, 40.10</td>
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<td>Dec 3 Lasers; Discussion</td>
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<td>Dec 5 <strong>Exam 3</strong></td>
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<td><strong>Dec 11</strong></td>
<td>Dec 8 Atomic spectra and applications</td>
<td>38.6-7, 41.6</td>
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<td>Dec 10 Cosmology and nucleosynthesis</td>
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<td>Dec 12 Course review and discussion</td>
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<td><strong>Dec 17</strong></td>
<td>Final exam, 6:30-8:30 pm, in lecture halls 1410/1412</td>
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