# PHYSICS 514 – FALL 2018

## Current Research Instruments

**Lecture:** TTh – 10:00 - 11:20  
**Room:** Physics basement - SL-265  
**as of August 7, 2018, subject to change**  
**Harold Metcalf - S-225**

<table>
<thead>
<tr>
<th>Week #</th>
<th>Monday date</th>
<th>Tuesday</th>
<th>Thursday</th>
<th>Homework</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>8/27</td>
<td>Intro &amp; Vacuum I (Metcalf)</td>
<td>Vacuum II (Metcalf)</td>
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<tr>
<td>II</td>
<td>9/3</td>
<td>Vacuum III (Metcalf)</td>
<td>Accelerators (Metcalf)</td>
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<tr>
<td>III</td>
<td>9/10</td>
<td>Our Tandem (Lefferts)</td>
<td>Feedback and Control (Metcalf)</td>
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<tr>
<td>IV</td>
<td>9/17</td>
<td>Tour of Accelerator (Lefferts)</td>
<td>Signals and Noise (Metcalf)</td>
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<td>V</td>
<td>9/24</td>
<td>Future Electron-Ion Collider (Hemmick)</td>
<td>Accelerator Physics (Litvinenko)</td>
<td>Feedback &amp; Control papers due Thursday</td>
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<tr>
<td>VI</td>
<td>10/1</td>
<td>Accelerators &amp; Detectors (Navid Vafei-Najafabadi)</td>
<td>Temperatures High and Low (Metcalf)</td>
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<tr>
<td>VII</td>
<td>10/8</td>
<td>NO CLASS HOLIDAY</td>
<td>Low Temperature Techniques (Xu Du)</td>
<td>Nuclear and accelerator papers due Tuesday</td>
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<tr>
<td>VIII</td>
<td>10/15</td>
<td>Liquefying Helium (Erle Graf - room A-133)</td>
<td>Atomic Force Microscopy (Matt Dawber)</td>
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<td>IX</td>
<td>10/22</td>
<td>Near Field Microscopy (Mengkun Liu)</td>
<td>Visit Electron Microscope (Quinn)</td>
<td>Low temp papers due Tuesday</td>
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<tr>
<td>XI</td>
<td>11/5</td>
<td>Ring and Diode Lasers Intro to Frequency Measurement (Metcalf)</td>
<td>Laser Locking Schemes Frequency Combs, Limits to Measurement (Metcalf)</td>
<td>Microscopy papers due Tuesday</td>
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<tr>
<td>XII</td>
<td>11/12</td>
<td>Visit to AMO Labs (Metcalf)</td>
<td>Ultracold (Schneble)</td>
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<tr>
<td>XIII</td>
<td>11/19</td>
<td>Ultrafast (Weinacht)</td>
<td>NO CLASS Thanksgiving</td>
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<tr>
<td>XIV</td>
<td>11/26</td>
<td>TBA</td>
<td>Deformable Mirrors Astronomical Instruments</td>
<td>Lasers and Optical papers due Tuesday</td>
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<tr>
<td>XV</td>
<td>12/3</td>
<td>Introduction to X-rays (Metcalf)</td>
<td>Synchrotron Radiation (Metcalf)</td>
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(Required Statement)

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person’s work as your own is always wrong. Any suspected instance of academic dishonesty will be reported to the Academic Judiciary. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/aa/academicjudiciary/