# PHYSICS 514 – – FALL 2017
# Current Research Instruments

Lecture: T$\theta$ – 10:00 - 11:20
Room: Physics basement - SL-265
as of August 8, 2017, subject to change

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| Week # Monday date | Tuesday | Thursday | Homework |
|---|---|---|---|
| I 8/28 | Intro & Vacuum I (Metcalf) | Vacuum II (Metcalf) | |
| II 9/4 | **NO CLASS HOLIDAY** | Vacuum III (Metcalf) | |
| III 9/11 | Feedback and Control (Metcalf) | Signals and Noise (Metcalf) | |
| IV 9/18 | Accelerators (Metcalf) | Our Tandem (Lefferts) ROSH | Feedback & Control papers due Thursday |
| V 9/25 | Tour of Accelerator (Lefferts) | Future Electron-Ion Collider (Hemmick) | |
| VI 10/2 | Accelerator Physics (Litvinenko) | Temperatures High and Low (Metcalf) | |
| **Everything below here is just a space holder. Subject to change.** | | | |
| VII 10/9 | Low Temperature Techniques (TBA) | Liquefying Helium (Graf - room A-133) | Nuclear and accelerator papers due Tuesday |
| VIII 10/16 | Atomic Force Microscopy (Matt Dawber) | Visit Electron Microscope (Quinn) | |
| IX 10/23 | Ultra-high Resolution Microscopy (Shu Jia) | Near Field Microscopy (Mengkun Liu) | Low temp papers due Tuesday |
| X 10/30 | Atomic Structure, Optical Instruments: What can we Measure? Intensity (Metcalf) | Polarization, Jones Matrices Intro to Tunable Lasers (Metcalf) | |
| XI 11/6 | Ring and Diode Lasers Intro to Frequency Measurement (Metcalf) | Laser Locking Schemes Frequency Combs, Limits to Measurement (Metcalf) | Microscopy papers due Tuesday |
| XII 11/13 | Ultracold (Schneble) | Ultrafast (Weinacht) | |
| XIII 11/20 | Visit to Laser Teaching Center & AMO Labs | **NO CLASS Thanksgiving** | |
| XIV 11/27 | Introduction to X-rays (Metcalf) | Synchrotron Radiation (Metcalf) | Lasers and Optical papers due Tuesday |
| XV 12/4 | Detectors at RHIC, EIC, and PHENIX (Deshpande) | Deformable Mirrors Astronomical Instruments (Metcalf) | |

(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/uaa/academicjudiciary/