



Module: Introduction to Material Science
Focus: *Nanoscience*
Duration: 43 minute period



- Objectives:**
1. Students will be able to define the term “nanoscience.”
 2. Students will be able to discuss the history of microscopy.
 3. Students will be able to explain the limitations of optical microscopy.
 4. Students will develop a working understanding of the Atomic Force Microscope (AFM) and the Scanning Electron Microscope (SEM).
 5. Students will be able to compare and contrast the SEM, AFM and the optical microscope.
 6. Students will be able to correctly observe given samples using the SEM.

Materials: SEM, AFM.

- Procedures:**
1. Introduce and discuss the term “nanoscience.”
 2. Give PowerPoint presentation on the Microscopy.
 3. Students will observe the AFM.
 4. Students will be trained on the proper use of the SEM.

Assignment: 1. See teacher notes.

Assessment: 1. Laboratory Journal, Classroom Participation, Quizzes & Test.

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Teacher Notes: If you do not have access to an SEM, the following interactive tutorial website may be helpful.

<http://micro.magnet.fsu.edu/primer/java/electronmicroscopy/magnify1/index.html>

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