

Pathology 464 Syllabus 2013

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This course is a hands-on introduction to the field of light microscopy. Proper technique and understanding of the optical basis of image formation are taught first covering all the conventional methods of contrast formation. Then, advanced methods including confocal laser scanning microscopy, FRET, FRAP, Co-localization and 3-dimensional reconstruction are covered. The course concludes with a discussion of Super Resolution microscopy.

The major sections are:

What makes a light microscope?

Why is resolution limited by diffraction?

The many modes of contrast formation.

Fluorescence and the world it has opened.

Confocal Laser Scanning Microscopy.

The 3-dimensional subcellular world.

Molecular interactions from afar.

Seeing molecules up close.