Subject: **Biomedical Image Acquisition and Processing**

Summary: Biomedical Image Acquisition deals with the technology and imaging algorithms for fundamental medical imaging systems (X-ray, CT, Nuclear Medicine, MRI, and Ultrasound). Biomedical Image Processing deals with algorithms and image processing techniques, including both general image processing, and specific applications to medical image data.

Keywords

- X-ray projection imaging, Computed Tomography
- Nuclear Medicine Imaging: Planar Scintigraphy, PET, SPECT
- Magnetic Resonance Imaging
- Ultrasound Imaging
- Mathematical models of image formation
- Contrast mechanism, Biological tissue properties
- Anatomical imaging, Functional imaging
- Instrumentation of imaging modality
- Imaging quality: resolution, contrast, noise, artifacts, accuracy
- Image segmentation
- Image enhancement
- Image filtering / deconvolution
- De-noising
- Fourier Transform
- Radon Transform
- Resolution / point spread function
- Morphological image processing
- Edge detection