

TO: Engineering Faculty
FROM: The Faculty of Biomedical Engineering
RE: New Graduate Level Course

The faculty of the Department of Biomedical Engineering has approved the following new course. This action is now submitted to the Engineering Faculty with a recommendation for approval.

BME 630/ECE 620 – Introduction to Biomedical Imaging Systems

Sem. 2. Class 3, cr 3. (Offered in alternate years.)

Pre- or co-requisite: ECE 637 or consent of instructor

Description: Overview of biomedical imaging systems and analysis. Examination of various imaging modalities including x-ray, ultrasound, nuclear, and MRI. Microscopy including how images are formed and what types of information they provide. Image analysis techniques including analysis of cardiac ultrasound, mammography, and MRI functional imagery.

Reasons: Graduate students in biomedical engineering must have knowledge of fundamental techniques of image processing used in biomedical imaging systems. These techniques are specific to biomedical applications and are not currently covered in other courses offered at Purdue.

George R. Wodicka
Professor and Head

Outline:

Topic	Number of Lectures
Historical Perspective and Overview	3
Xray Imaging: Protection Imaging	8
Computed Imaging	6
MRI	6
Ultrasound	4
Microscopy	4
Functional Imaging	3
Multimodality Fusion	2
Enhancement and Registration	2
Object Recognition	3
Exams	3