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 in BME to be cross listed with existing course ECE 620. This action is now submitted to the Engineering Faculty with a recommendation for approval.

BME 630 Introduction to Biomedical Imaging Systems (ECE 620) Sem. 2. Class 3, cr 3. (Offered in alternate years.) Prerequisite: ECE 637 or permission of the instructor

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. This course is currently offered as ECE 620.

George R. Wodicka
Professor and Head

Course Instructor: Ed Delp

Text:
Foundations of Medical Imaging, Z. H. Cho, J. P. Jones, and M. Singh, Wiley, 1993.

Course Outline:

Topics	Lectures
1. Historical Perspective and Overview	2
2. X-ray Imaging	8
3. Computed Imaging	6
4. MRI	6
5. Ultrasound	6
6. Microscopy	3
7. Analysis, Functional Imaging, Multimodality Fusion, Object Recognition	10
8. Exams	3
	Total 44