

Open to All Majors
No D-Clearance Required!

BME 427: Basics of Biomedical Imaging (Non-Ionizing Radiation)

Spring – Units: 2.0

2 sessions offered:

Thursdays (11 am-1 pm OR 3:30 pm-5:30 pm)

Instructor: Prof. Cristina Zavaleta

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What you will learn during this class:

- What your insides really look like!
- How to impress your medical school instructors with your extensive knowledge of medical imaging principles and their clinical utility.
- How much radiation you receive after traveling in an airplane vs. getting an MRI.
- What the difference is between ionizing and non-ionizing radiation.
- How to know which imaging techniques are best to answer different clinical questions.
- How to show off to your friends and family about your medical imaging knowledge.

Course Description

Students will be introduced to various biomedical imaging methods that use non-ionizing radiation sources. These include both clinical and preclinical imaging platforms: MRI imaging, ultrasound, and various optical imaging techniques like fluorescence, bioluminescence, photoacoustics, and Raman imaging. The history and physics behind how each of these imaging techniques came about will be discussed. The strengths and weaknesses of each imaging technique will also be covered in depth and **students will have an opportunity to participate in hands-on imaging demonstrations**. Engineering considerations will also be discussed on how to optimize these imaging techniques for specific biomedical applications. No previous class requirements needed.