

ECE 700 TOPIC 5: BIOMEDICAL ULTRASONICS (SPRING 2019)

Course Description and Aims

This is a course dedicated to the technical foundations of biomedical ultrasound, and it is designed for graduate students. We will cover the physical principles behind ultrasound, its medical imaging modes, and its therapeutic usages.

Teaching Staff

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Lecture Time

Friday, 2:30pm-5:20pm
Location: EIT 3151

Course Learning Outcomes

By the end of this course students should be able to demonstrate a threshold level of mastery of the following learning outcomes:

1. Describe how ultrasound is used in diagnostics and therapy
2. Summarize the imaging principles related to ultrasound
3. Give examples on the biomedical applications of ultrasound
4. Explain the potential safety concerns on ultrasound

Course Prerequisites

Some background in general wave physics (ECE 105 or equivalent) and signals theory (ECE 207 or equivalent) would be helpful. Literacy in human physiology is not mandatory, but it will be a plus.

Grade Breakdown

In-Class Discussions	10%
Assignments & Laboratories	40%
Quizzes & Exam	50%

References & Course Website

No textbook is required for this course. Selected course readings will be posted on LEARN. Students are advised to regularly consult the LEARN site for this course.