Winter 2020

Advanced Topics on Magnetic Resonance Imaging
BME1466

Faculty of Engineering, University of Toronto

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Course Description

This graduate level course is intended to provide an in-depth coverage on the theory, practice, and applications of magnetic resonance imaging (MRI). Applications in cardiovascular and oncological imaging, amongst others, will be investigated, as well as the MR imaging techniques, pulse sequences, and contrast agents appropriate to different applications. The format is based on a combinatorial lecture/literature research approach.

Learning Objectives

- Understand fundamental physics of nuclear magnetic resonance and magnetic resonance imaging
- Become familiar with the most advanced MRI methods and their applications. These include cardiac MRI, perfusion MRI, metabolic MRI, rapid MRI, and contrast agents/molecular imaging.
- Prepare a comprehensive literature review article on one of the special topics.

Lectures

Tuesday	10:00 am – 12:00 pm	RS 412	(LEC 01)

Composition of Final Mark

Class participation	10%
Weekly journal review	40%
Term project	50% (presentation 20%, written report 30%)

Course Policies

- The Faculty's policy on Petition for Consider in Course Work will be employed for late assignments. Official supporting documentation must be provided and the completed petition must be filed with the EngSci office. Late assignments are deducted 15% per business day.
- Questions regarding marking must be written on paper and submitted with the associated assignment. There is a 48-hour limit (weekends and holidays excluded) to request a recheck.
- Academic integrity is of utmost important. Any issues of plagiarism and inappropriate collaboration will be taken seriously and reported to the appropriate higher authority.
- Students with diverse learning styles and needs are welcome in this course. If you have a disability/health consideration that may require accommodations, please feel free to approach me and/or Accessibility Services at (416) 978 8060; http://accessibility.utoronto.ca.