MEDI 7004 APPLICATIONS OF MAGNETIC RESONANCE FROM CANCER TO NEUROANATOMY

Legacy Code 401203

Coordinator Bill Price (https://directory.westernsydney.edu.au/search/name/Bill Price/)

Student Contribution Band

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Articulate a clear understanding of the concepts of magnetic resonance and imaging.
2. Discuss the current and potential applications of magnetic resonance to medicine and other fields.
3. Conduct basic and advanced magnetic resonance experiments.
4. Process and analyse MRS and MRI data.
5. Apply magnetic resonance and imaging to other disciplines.
6. Understand OH&S issues related to magnetic resonance.

Subject Content

1. Safety in the Research Magnetic Resonance/Clinical MRI Laboratory
2. Basic NMR theory
3. Chemical shift and spin-spin coupling
4. Spin relaxation and diffusion
5. Standard 1D and multidimensional NMR experiments
6. Basic magnetic resonance imaging (MRI) experiments
7. Magnetic resonance spectroscopy (MRS) in brain and tissues
8. Functional magnetic resonance imaging of the brain
9. Medical image processing
10. Diffusion imaging
11. Advanced Techniques in magnetic resonance

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Written worksheet submission	5 x 3 hours	30	N	Individual	
Essay	1,500-2,000 words	20	N	Individual	
Written Examination	2 hours	50	N	Individual	