

NSCI-521: Introduction to fMRI Syllabus – Fall 2011

September 1	Lecture 1: Chapter 1: Introduction to fMRI Chapter 2: MRI Hardware Components, MRI Safety
September 8	Lecture 2: Principles of Magnetic Resonance Imaging and MR Contrast (equivalent to Chapters 3, 4, & 5 w/o equations)
September 15	Lecture 3: Chapter 6: Neuronal Processing and Hemodynamics Chapter 7: BOLD Contrast and Properties of the BOLD Signal
September 22	Lecture 4: Chapter 8 (1 st half): Signal and Noise in BOLD fMRI Chapter 9: Experimental Design
September 29	Guest Lecture: Rapid Adaptation fMRI, Xiong Jiang, PhD Midterm Review
October 6	Midterm Exam Lab 1: Plan Experiments
October 13	Lab 2: Plan Experiments & Develop Stimulus Presentation Scripts
October 20	Lab 3: Develop Stimulus Presentation Scripts (continued)
October 27	Lab 4: fMRI Data Collection
November 3	Lecture 5: Chapter 8 (2 nd half): Data Analysis – Preprocessing
November 10	Lab 5: Preprocessing of Student Data
November 17	Lecture 6: Chapter 10: Statistical Analysis of fMRI Data
December 1	Lab 6: Statistical Analysis of Student Data
December 8	Lecture 7: Chapter 12: Advanced fMRI Methods
December 22	Project Reports Due

Reading:

All chapters refer to the textbook:

Huettel, S.A., Song, A.W., McCarthy, G (2004). [Functional Magnetic Resonance Imaging, 2nd Edition.](#)

Additional reading material will be made available on BlackBoard and online:

<http://cfmi.georgetown.edu/training.php>

Class Time:

10:15am – 1:00pm on Thursdays

Office Hours by Arrangement:

Email: jwv5@georgetown.edu

Phone: 202-687-8767

Preclinical Science Building, Suite LM-14 (Lower Level - LL, Main Corridor)

Project Reports:

1 Report per Group

Scientific paper format:

Introduction, Methods, Results, Discussion, and References

Grades:

Grades will be based on the Midterm Exam (35%) and Project Report (65%).

Each member of a group is expected to provide input on the experiment and report. Degree of participation in the labs and report writing will be assessed by fellow group members.