

## **NSCI-521: Introduction to fMRI Syllabus – Fall 2011**

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