

Advanced fMRI Methods

Course #101-2-15

Tuesdays 12:00-14:00, Room 401, Bldg #35

This graduate level course for Psychology, Cognitive sciences, and Brain Sciences students focuses on advanced techniques for building and analyzing fMRI experiments. During the semester each student will build and carry out an fMRI experiment and perform several types of data analysis using Matlab. The course is taught in a computer lab and students are expected to write a considerable amount of Matlab code at home based on the examples taught in class. The grade will be based on two homework assignments: one small (30%) and one large (70%).

Lesson 1: Introduction to fMRI – [Class files](#)

Lesson 2: Modeling the HRF & building a GLM – [Class files](#)

Lesson 3: Single subject analysis I – [Class files](#), [MRI data](#)

Lesson 4: Single subject analysis II – [Class files](#)

Lesson 5: Multisubject data analysis – [Sub1](#), [Sub2](#), [Sub3](#), [Sub4](#), [Class files](#)

Lesson 6: Building experiments w/[Psychtoolbox](#) – [Class files](#)

Lesson 7: Visit the MRI scanner and run individual experiments

Lesson 8: Noise & head motion – [Class files](#)

Lesson 9: Natural stimuli – [Class files](#), [Scan1](#), [Scan2](#)

Lesson 10: Rest scans – [Class files](#)

Lesson 11: fMRI Adaptation & Classification – [Class files](#)

Bibliography:

Functional Magnetic Resonance Imaging, S. Huettel, 3rd ed.,