

## SHS8950. Neuroimaging of speech, language, and music Course Syllabus

**Instructor:** Yune S.Lee, Ph.D.

**Class Location:** Pressey Hall Rm. 1

**Time:** Monday. 3:00-5pm

**Class Website:** Canvas

**Office Hours:** 3-4pm (Tuesday)

**Office Address:** 101d Pressey Hall

**Email:** [lee.7966@osu.edu](mailto:lee.7966@osu.edu)

**Phone:** 614-292-1743

### Goals:

1. Students will learn ethics/rules of neuroimaging data management
2. Students will learn principles logics underlying various neuroimaging methods.
3. Students will learn how to design neuroimaging experiments.
4. Students will get hands-on experience on basic neuroimaging data analysis.

### Learning Objectives:

1. Students will be able to apply inclusion / exclusion criteria of data.
2. Students will be able to explain the rationale of opted-neuroimaging methods.
3. Students will be given with an opportunity of proposing their own dream studies.
4. Students will be able to navigate neuroimaging data using fMRI software packages

## COURSE REQUIREMENTS AND GRADING

### • **fMRI Data Analysis (40% of grade)**

Students will apply the learned knowledge and skillsets on fMRI datasets.

### • **Journal Presentation (20% of grade)**

Students will choose a neuroimaging journal of interest and give a presentation.

### • **Mock Proposal (40% of grade)**

This final assignment will provide students with the opportunity to conceive neuroimaging experiments wherein knowledges and insights gained over the course of class will be integrated to the research idea. Although it aims to be a mock proposal (following NIH format guideline), this may turn into a viable research proposal that can be further pursued.

### **Readings (Text Book)**

Poldrack, Mumford, and Nichols, Handbook of Functional MRI Data Analysis, Cambridge. \* PDF copy can be obtained from the OSU library

### Grading Scale (%):

A	93-100	B	83-86	C+	73-76	D	63-66
A-	90-92	B-	80-82	C-	70-72	E	<63
B+	87-89	C+	77-79	D+	67-69		

### SCHEDULE OF LECTURES AND ASSIGNMENTS:

	Week	Topic	Assignment
<b>Week 1:</b>	Jan 6	Overview of functional NeuroImaging -part1	
<b>Week 2:</b>	Jan 13	Overview of functional NeuroImaging -part2	
<b>Week 3:</b>	Jan 27	Experimental Design	
<b>Week 4:</b>	Jan 31	Preprocessing-1: lecture	
<b>Week 5:</b>	Feb 3	Preprocessing-2: lecture / hands-on practice	
<b>Week 6:</b>	Feb 10	Preprocessing-3: hands-on practice	Homework with sample
<b>Week 7:</b>	Feb 17	Statistical Modeling: lecture / hands-on practice – part1	
<b>Week 8:</b>	Feb 24	Statistical Modeling: lecture / hands-on practice – part2	Homework with sample
<b>Week 9:</b>	Mar 2	CCBBI tour	
<b>Week 10:</b>	Mar 9	<i>Spring Break</i>	
<b>Week 11:</b>	Mar 16	Field trip to PET Imaging center	
<b>Week 12:</b>	Mar 23	Recap / Statistical Modeling: hands-on practice	Homework with sample
<b>Week 13:</b>	Mar 30	fMRI data analysis practice / Q&A	
<b>Week 14:</b>	April 6	Article Review Presentation	
<b>Week 15:</b>	April 13	fMRI data analysis test	
<b>Week 16:</b>	April 20	Presentation of the proposal	

### CLASS POLICIES

1. Lecture topics scheduled in this syllabus are subject to change. Any changes will be announced in class.
2. Late assignments will **not** be accepted for credit.
3. Regular attendance is expected, although it is not recorded. Class lectures include the textbook; however, additional information is covered during lecture that may not be covered in the textbook. You are encouraged to attend class on a regular basis.

4. Cell Phones: The use of cell phones or pagers during class is prohibited. Please extend the courtesy to your classmates and the instructor by turning off your cell phone during class time.

### **UNIVERSITY DIVERSE STATEMENT**

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.

### **STUDENTS WITH DISABILITIES**

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated and should inform the instructor as soon as possible about their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292 3307, TDD 292 0901; on the web at <http://www.ods.ohio-state.edu>

### **ACADEMIC MISCONDUCT**

Academic misconduct refers to any activity that compromises the academic integrity of the university or undermines the educational process. Academic misconduct will not be tolerated. Instances believed to constitute misconduct will be reported to the committee on academic misconduct. Examples include but are not limited to: plagiarism, cheating on examinations, violation of course rules outlined in this syllabus. Additional examples of academic misconduct are outlined below. Further information can be found in your student handbook and at the office of student affairs [http://studentaffairs.osu.edu/resource\\_csc.asp](http://studentaffairs.osu.edu/resource_csc.asp)

Examples of academic misconduct include, but are not limited to:

1. Violation of course rules as contained in the course syllabus or other information provided to the student; violation of program regulations as established by departmental committees and made available to students;

2. Knowingly providing or receiving information during examinations such as course examinations and candidacy examinations; or the possession and/or use of unauthorized materials during those examinations;
3. Knowingly providing or using assistance in the laboratory, on field work, in scholarship or on a course assignment;
4. Submitting plagiarized work for an academic requirement. Plagiarism is the representation of another's work or ideas as one's own; it includes the unacknowledged word-for-word use and/or paraphrasing of another person's work, and/or the inappropriate unacknowledged use of another person's ideas;
5. Submitting substantially the same work to satisfy requirements for one course or academic requirement that has been submitted in satisfaction of requirements for another course or academic requirement, without permission of the instructor of the course for which the work is being submitted or supervising authority for the academic requirement;
6. Falsification, fabrication, or dishonesty in creating or reporting laboratory results, research results, and/or any other assignments;
7. Serving as, or enlisting the assistance of a substitute for a student in the taking of examinations;
8. Alteration of grades or marks by the student in an effort to change the earned grade or credit;
9. Alteration of academically-related university forms or records, or unauthorized use of those forms or records; and
10. Engaging in activities that unfairly place other students at a disadvantage, such as taking, hiding or altering resource material, or manipulating a grading system.