

**fMRI Image Acquisition and Analyses Course**  
**July14- 16, 2011**

Course Faculty: Kent A. Kiehl, Ph.D.,  
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<b>Day 1: : July 14, 2011</b>				
	Start	Duration		
Lect 1.1	8:00 am	0:30	Course Introduction	Kiehl, Calhoun, Wager
	8:30 am	1:00	Tour of MRI + acquisition of data; stimulus presentation; behavioral monitoring; signal acquisition	Kiehl
	9:30 am	0:30	Coffee Break	
Lect 1.2	10:00 am	1:00	fMRI pulse sequences, reconstruction; basic physics	Calhoun
	11:00 am	1:00	SPM and Toolbox install – computer check	Wager
	12:00 pm	0:30	Lunch (provided)	
Lect 1.3	12:30 pm	1:00	Intro to SPM; Data checking; Reorienting data	Kiehl
Lect 1.4	1:30 pm	1:00	Spatial Preprocessing: Realignment/ Slice Timing/ Unwarp/	Kiehl
	2:30 pm	0:30	Coffee Break	
Lect 1.5	3:00 pm	1:00	Spatial Preprocessing: Coregistration/ Spatial Normalization	Kiehl
Lect 1.6	4:00 pm	0:30	Spatial Smoothing	Kiehl
Lect 1.7	4:30 pm	1:00	General Linear Model I- Principles and fMRI	Wager
	5:30 pm	0:30	Question/answer	Kiehl, Wager, Calhoun
	6:00 pm		Adjourn	
	<b>7:00 pm</b>		<b>Social Outing – Elephant Bar</b>	

**Day 2 : July 15, 2011**

	Start	Duration		
	8:00 am	1:00	Review from Day 1 question and answer	Kiehl, Calhoun, Wager
Lect 2.1	9:00 am	1:00	General Linear Model II: Basis sets, autocorrelation, and filtering for fMRI	Wager
	10:00 am	0:30	Coffee	
Lect 2.2	10:30 am	1:00	SPM GUI for Single Subject stats/explore design/scaling	Kiehl
	11:30 am	0:30	Lunch (provided)	
Lect 2.3	12:00 pm	1:00	General Linear Model III: Contrasts	Wager
Lect 2.4	1:00 pm	1:00	SPM Results: Single subjects; plotting; display	Kiehl
	2:00 pm	0:30	Break; Coffee	
Lect 2.5	2:30 pm	1:00	Intro to connectivity and mediation	Wager
Lect 2.6	3:30 pm	1:30	Introduction to Independent Component Analysis	Calhoun
	5:00 pm	1:00	Question/answer	Kiehl, Calhoun, Wager
	6:00 pm		Adjourn	

**Day 3: July 16, 2011**

	Start	Duration		
	8:00 am	0:30	Review of Days 1-2	Kiehl, Calhoun, Wager
Lect 3.1	8:30 am	1:00	Experimental Design – Blocked and event-related designs and efficiency	Wager
Lect 3.2	9:30 am	1:00	Group analysis: Fixed, random, and mixed effects	Wager
	10:30 am	0:30	Coffee Break	
Lect 3.3	11:00 am	1:00	SPM results – group subjects; plotting; display; small volume correction	Kiehl
	12:00 pm	:30	Lunch (provided)	
	12:30 pm	1:00	Group analysis: Thresholding and inference	Wager
Lect 3.4	1:30 pm	1:00	Independent Component Analyses II: fMRI	Calhoun
	2:30 pm	:30	Coffee Break	
Lect 3.5	3:00 pm	2:00	ICA of fMRI: Implementation	Calhoun, Kiehl
	5:00 pm	1:00	Review & Final Q and A	Kiehl, Calhoun, Wager
	6:00		Adjourn	