Revised Syllabus

Week 1
Monday 10/1   Course Policies; Overview of Course Content; Signals and Images
                              [Liu/Jung/Makeig]
Wednesday 10/3   Signal and Image Expansions; Fourier Transforms [Liu]

Week 2
Monday 10/8   MRI: Basic physics and technology; Bloch Equation [Liu]
Wednesday 10/10   MRI: Gradients, Signal Equation; Spin-Warp Pulse Sequence; Revisit Fourier
                              Transforms [Liu]

Week 3
Monday 10/15   Impulse Response; Superposition and Shift Invariance; Convolution; Frequency
                              Response [Liu]
Wednesday 10/17   Sampling Theory; Aliasing; Application to MRI [Liu]

Week 4
Monday 10/22   MRI: Slice selection and RF pulse design [Liu]
Wednesday 10/24   MRI: Image Contrast; Flow; Diffusion [Liu]

Week 5
Monday 10/29   Functional Magnetic Resonance Imaging [Liu]
Wednesday 10/31   Functional Connectivity [Liu]

Week 6
Monday 11/05   EEG: Basic Physics [Jung/Makeig]
Wednesday 11/07   EEG: Signal Processing Approaches [Jung/Makeig]

Week 7
Monday 11/12   **NO CLASS; Veteran's Day Holiday**
Wednesday 11/14   Independent Components Analysis [Jung/Makeig]

Week 8
Monday 11/19   Forward and Inverse Modeling [Jung/Makeig]
Wednesday 11/21   Beamforming; Source versus Channel Analysis [Jung/Makeig]

Week 9
Monday 11/26   Simultaneous EEG and fMRI; Multimodal Imaging [Liu/Makeig]
Wednesday 11/28   Multimodal Approaches to Characterizing Brain Connectivity [Liu/Makeig]

Week 10
Monday 12/03   Cognitive monitoring; Hardware Trends [Jung/Makeig]
Wednesday 12/05   Brain Computer Interfaces [Jung/Makeig]

Week 11
Finals Week