# 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**