Information:

¨Course: BMENE 6000, MR Instrumentation

¨Prof: Tommy Vaughan

¨Classroom: JLGSC L7-081, Wed 1:10 – 3:40P

¨Office: 402 CEPSR Schapiro

¨Hours: Monday, Tuesday, 9:30 – 12:00

¨Email: jtv2114@columbia.edu

¨Admin Assist: Marleny Martinez, mm5631@cumc.columbia.edu

¨Research Manager: Kathleen Durkin, kd2649@columbia.edu

Syllabus:

¨Jan 22 – Course Introduction

¨Jan 29 - MR System Overview, Project Assignments

¨Feb 5 – MR Safety Training

¨Feb 12 – MR System Operation

¨Feb 19 – Magnets

¨Feb 26 – Gradients and Shims

¨Mar 4 – Cryostats and Cryogenics

¨Mar 11 - RF Spectrometer

¨Mar 25 – RF Coils

¨Apr 1 - Data Acquisition and Control Interface

¨Apr 8 - Digital Console

¨Apr 15 - Remote Control / Automation

¨Apr 23 - Final Written Exam

¨Apr 29 – Design Presentations, Reports Due

Objectives and Expectations

¨1.) Learn the components of an MR system and how it works. - evaluated by exam.

¨2.) Design a new generation MR system. - evaluated by project report and presentation

Each member will be asked to design a different subsystem of a new generation MR system to meet world accessibility criteria.