

FYS-KJM 4740 "Physics of MRI" Spring 2016

| Week | Date | Topic | Who | Type |
|-------------|-------------|-----------------------------------------------------------------------------------|------------|-------------|
| 3 | 18.1 | MR spectroscopy and Tomography part I | EWH | LC |
| | 20.1 | MR spectroscopy and Tomography part I | EWH | LAB? |
| | 21.1 | MR spectroscopy and Tomography part I | EWH | |
| 4 | 06.1 | MR spectroscopy and Tomography part I | EWH | |
| | 27.1 | MR spectroscopy and Tomography part I | EWH | |
| | 28.1 | MR spectroscopy and Tomography part I | EWH | |
| 5 | 3.2 | Introduction to part II MR imaging | AB | LC |
| | 4.2 | Bloch-equation, excitation, precession and relaxation (recap from part I) | | LC |
| 6 | 8.2 | Image formation; k-space formalism | AB | LC |
| | 9.2 | Omvisning / LAB 1 Intervensjonssenteret | AB/ØG | LAB |
| | 10.2 | Intro to pulse sequences – MR signal behavior and image contrast | | |
| | 11.2 | MR signal behavior & contrast, steady state (SS) sequences (I) | AB | |
| 7 | 15.2 | LAB 2 Intervensjonssenteret | | LAB |
| | 16.2 | SS Sequences (II); accelerated k-space trajectories , parallel imaging techniques | AB | |
| | 17.2 | Magnetization preparation, image quality, signal and contrast to noise ratio | AB | |
| 8 | 22.2 | Off-resonance effects, spins in motion, flow-effects | AB | |
| | 24.2 | MR contrast agents, advanced applications (I) | AB | |
| | 25.2 | Advanced methods (II), diffusion, DTI, fMRI | AB | |
| 9 | 29.2 | Revision + hand in of obligatory lab exercises | AB | |
| | 2.3 | Revision (if needed) | AB | |
| | 3.3 | | AB | |
| 10 | 7.3 | | AB | |
| | 9.3 | Oral exam | AB | |

Syllabus is entirely based on compendia available from course homepage.