

Date	Time	Task	Litterature	Location	Teacher
Tue	4/Sep 8.15 - 10.00	Introduction magnetism. Introduction to MR.	A1, Handouts	Marmorsalen	AG
Thu	6/Sep 10.15 - 12.00	Basic NMR-theori. Resonance conditions. The Bloch equations	B9.1-9.3, A3	Marmorsalen	AG
Tue	11/Sep 13.15 - 15.00	Signal and noise, Relaxation theory	A7.1-7.2, B11.3.1, B9.4-9.6	Marmorsalen	AG
Thu	13/Sep 13.15 - 15.00	The MRI system	B10	Marmorsalen	AG
Tue	18/Sep 13.15 - 15.00	Fourier transforms, Encoding images, k-space, slice-selection	B8.1-8.5, (A9.1-9.4, 10.1-10.3, 11.1-11.3, 12.1-12.2)	Marmorsalen	AG
Wed	19/Sep 13.15 - 15.00	Calculation exercise	Tutorial 1	Marmorsalen	AG
Thu	20/Sep 13.15 - 15.00	MRI Sequences. GRE. SE. TSE. EPI	B12, B13	Marmorsalen	AG
Tue	25/Sep 13.15 - 15.00	Image SNR, Speeding up imaging	B6, B8.7, B14	Marmorsalen	AG
Thu	27/Sep 13.15 - 15.00	Artefacts	B7	Marmorsalen	AG
Mon	1/Oct 17.00 - 20.00	Lab 1, group 1	Lab handout	Rtg A14 101-110	JH
Wed	3/Oct 17.00 - 20.00	Lab 1, group 2	Lab handout	Rtg A14 101-110	JH
Thu	4/Oct 17.00 - 20.00	Lab 1, group 2	Lab handout	Rtg A14 101-110	JH
Mon	8/Oct 8:15 - 12.00	Lab 2, Alla grupper	Lab handout	Datorlab 1	AG
Tue	9/Oct 13.15 - 15.00	Flow, fMR, perfusion, diffusion. Safety and risks	B15.1-15.3.2, B9.7, B18,	Marmorsalen	AG
Thu	11/Oct 13.15 - 15.00	MR-spectroscopy - chemical shift imaging	B17	Marmorsalen	JH
Tue	16/Oct 13:15 - 15.00	Ultrasound	Handouts	Marmorsalen	CG
Wed	17/Oct 13.15 - 15.00	Calculation exercise	Tutorial 2	Marmorsalen	AG
Thu	18/Oct 13.15 - 15.00	Ultrasound	Handouts	Marmorsalen	CG
Thu	25/Oct 13.15 - 15.00	Demo ultrasound + ultrasound calculation exercise	Tutorial 3	MT-FOU konferensrum	CG
Tue	30/Oct 13:15 - 15.00	Repetition	Old exam	Marmorsalen	AG,CG,JH
Fri	2/Nov 14.00 - 20.00	Exam		IKSU	

Teachers:

AG Anders Garpebring
 CG Christer Grönlund
 JH Jón Hauksson

Literature:

A: Robert W. Brown, Y. -C Norman Cheng, E. Mark Haacke
 2nd Ed. Wiley-Blackwell, ISBN-9780471720850. (Available as E-book at the university library)
B: D. W. McRobbie, E. A. Moore, M. J. Graves and M. R. Prince MRI From Picture to Proton
 3rd Ed. Cambridge University Press (ISBN 9781107643239)