

wk	Date	Lec Outline	Lab	Spectrometer
1	9/2	Organization: labs, grades, etc FIDs and Spectra → find out where they are at	Data workup: MNova	n/a
2	9/9	Sample prep: tubes, solvents, sample Resolution → shimming → conjugate pairs: $AQ \propto 1/\Delta\nu$; Bruker'isms	Introduction to ^1H 1D NMR	AC-300 (Athena)
3	9/16	Spins, Larmor, lab and rotating frame	^1H 1D NMR and resolution	Avance-400 (Artemis)
4	9/23	^{13}C NMR: sensitivity, quantitation, coupling	Filters and folding + ^{13}C 1D NMR (NOEs)	Avance-500P (Persephone) and AC-300
5	9/30	^1H NMR: high-quality spectra ^{13}C NMR: 2-spin NMR → decoupling; → noes and PT	Advanced ^{13}C 1D NMR: polarization transfer (DEPT, INEPT, APT, DEPTQ)	Avance-500C (Callisto)
6	10/7	Spin Echoes & Polarization Transfer	Other nuclei: ^{19}F , ^{31}P , ^{119}Sn (+ ^{11}B , ^{29}Si)	Avance-500P
7	10/14	Polarization Transfer: INEPT and HSQC	Automation: IconNMR and VNMRJ	Avance-400 & Merc-300 (in automation)
8	10/21	2D NMR: intro	Midterm lab exam	Avance-500P
9	10/28	2D NMR: homonuc correlations	Homonuclear 2D NMR: COSY and TOCSY	Avance-400
10	11/4	2D NMR: heteronuc correlations	Heteronuclear 2D NMR: HSQC (1-bond) assignments in MNova	Avance-500C
11	11/11	2D NMR: long-range correlations	Heteronuclear 2D NMR: HMBC (n-bond) assignments in MNova Publishing NMR tables using MNova	Avance-400
12	11/18	Relaxation and Selective 1D exps	T_1 relaxation and TOCSY1D	Avance-400/500P
13	11/25	catch-up	Thanksgiving week	
14	12/2	Stereochemistry, ^1H - ^1H distances	NOESY1D and ROESY1D	Avance-500C
15	12/9	finish up	Final lab exam	Any/all spectrometers

Thanksgiving Nov27-30

last day: Dec 12