

Week	Date	Lecture Topic	Lab	Due
1	8/23/2018	Introduction and Course Overview	None	
2	8/28/2018	Review: Radiation interactions and basic detection concepts	Reproducible Workflows for NE204	
	8/30/2018	Review: Semiconductor detectors, signal generation		Reading Assignment 1
3	9/4/2018	Review: Front ends and analog signal processing	RUA Onboarding & Lab I Intro	
	9/6/2018	Introduction to digital signal processing		Reading Assignment 2
4	9/11/2018	Signal deconvolution and FIR filters	Lab I: Digital signal processing	
	9/13/2018	Guest Lecture: Marco Salathe (LBNL) - Semiconductor electrode segmentation and signal generation		Lab 0 Due
5	9/18/2018	Energy resolution, electronic noise, fano factor	Lab I: Digital signal processing	
	9/20/2018	Signal generation in semiconductors - Shockley Ramo		
6	9/25/2018	Charge carrier transport - mobility and lifetime	Lab I: Digital signal processing	
	9/27/2018	Experimental determination of charge transport characteristics		
7	10/2/2018	Signal generation in scintillation detectors	Lab II: Multichannel Detectors	
	10/4/2018	Non-proportionality in scintillators		
8	10/9/2018	Neutron detection and pulse-shape discrimination	Lab II: Multichannel Detectors	
	10/11/2018	Neutron scatter kinematics and imaging		
9	10/16/2018	Introduction to gamma-ray imaging	Lab III (variable)	
	10/18/2018	Collimated gamma-ray imaging modalities		
10	10/23/2018	Non-collimated gamma-ray imaging modalities	Lab III (variable)	
	10/25/2018	Advanced imaging techniques		
11	10/30/2018	Principles of mobile detector operation - SLAM	Lab III (variable)	
	11/1/2018	Advanced concepts in data fusion		
12	11/6/2018	TBD	Open session (final project)	
	11/8/2018	TBD		
13	11/13/2018	TBD	Open session (final project)	
	11/15/2018	Student Presentations		
14	11/20/2018	Student Presentations	Open session (final project)	
	11/22/2018	NO Lecture (Thanksgiving)		
15	11/27/2018	Student Presentations	Open session (final project)	
	11/29/2018	Student Presentations		