

## P627 Class Syllabus for Spring 2022 (tentative)

### Experimental Methods in Particle and High-Energy Physics

L#.pdf	Day	Date	Instructor Yu.Kamyshkov (kamyshkov@utk.edu)	21-Jan-22
01	Mo	01/24/22	Introduction, scope, sources, computing	due time 2 pm
02	We	01/26/22	Natural Units, Particle Kinematics	
03	Fr	01/28/22	Particle Kinematics	
04	Mo	01/31/22	Particle Kinematics	
05	We	02/02/22	Particle Kinematics	HW #1 due
06	Fr	02/04/22	Particle Kinematics	
07	Mo	02/07/22	Cross sections	
08	We	02/09/22	Random Numbers	HW#2 due
09	Fr	02/11/22	Monte Carlo methods	
10	Mo	02/14/22	Monte Carlo methods	
11	We	02/16/22	Probability and Statistics	HW#3 due
12	Fr	02/18/22	Probability and Statistics	
13	Mo	02/21/22	Statistical methods	
14	We	02/23/22	Statistical methods	
15	Fr	02/25/22	Particle interactions with matter	HW #4 due
16	Mo	02/28/22	Particle interactions with matter	
17	We	03/02/22	Particle interactions with matter	
18	Fr	03/04/22	Particle interactions with matter	
19	Mo	03/07/22	Particle interactions with matter	
20	We	03/09/22	Particle interactions with matter	
21	Fr	03/11/22	Cross Sections	HW #5 due
			Take-Home Test #1 on topics L01-L21	due 3/23/22
		14-18	Spring Break	
22	Mo	03/21/22	Interactions of Neutrons	
23	We	03/23/22	Interactions of Neutrinos	
24	Fr	03/25/22	Interactions of Dark Matter	
25	Mo	03/28/22	Gas detectors, Proportional, Drift, TPC, etc.	HW #6 due
26	We	03/30/22	Gas detectors, Proportional, Drift, TPC, etc.	
27	Fr	04/01/22	Scintillation, WLSF, detectors, PMTs	
28	Mo	04/04/22	Scintillation, WLSF, detectors, PMTs	HW #7 due
29	We	04/06/22	Cherenkov Detectors, TRD	
30	Fr	04/08/22	Absorption measurements, Calorimeters	
31	Mo	04/11/22	EM Calorimeters	HW #8 due
32	We	04/13/22	Hadron Calorimeters	
	Fr	04/15/22	Spring Recess	
33	Fr	04/18/22	Particle ID, Momentum measurement	HW #9 due
34	Mo	04/20/22	Si detectors, Vertex reconstruction	
35	We	04/22/22	Reserve	
36	Fr	04/25/22	Analog and Digital electronics, trigger, DAQ	HW#10 due
37	Mo	04/27/22	Analog and Digital electronics, trigger, DAQ	
38	We	04/29/22	Research Projects	HW#11 due
39	Mo	05/02/22	Research Projects	
			Take-Home Test #2 on topics L22-L37	due 5/3/22
40	We	05/04/22	Research Projects	
41	Fr	05/06/22	Reserve	
42	Mo	05/09/22	Organization, Politics, Funding, Large Projects	
		5/16/2022	10:30 - 12:45      • No Final Test •	
Recommended textbook:			G.F.Knoll, Radiation Detection and Measurement, ed.3-4	
			Class meets in 608 MWF 9:15 - 10:05	