

Other References: The Department graduate library and/or University library have several other texts which serve as useful complements to the texts in this course:

D. Green, *The Physics of Particle Detectors*, Cambridge U. Press, 2000.

R. Cahn and G. Goldhaber, *Experimental Foundations of Particle Physics*, Cambridge U. Press, 2009.

Experimental Techniques in High-Energy Nuclear and Particle Physics, ed. by T. Ferbel, World Scientific Publ. Co., 1999.

R. Fruhwirth, et al., *Data Analysis Techniques for High-Energy Physics*, Cambridge U. Press, 2000.

W. Leo, *Techniques for Nuclear and Particle Physics Experiments*, Springer-Verlag, 1994.

C. Leroy and P. Rancoita, *Principles of Radiation Interaction in Matter and Detection*, World Scientific Publ. Co., 2009.

K. Kleinknecht, *Detectors for Particle Radiation*, Cambridge U. Press, 1998.

A. Frodesen, O. Skyeggestad and H. Tofte, *Probability and Statistics in Particle Physics*, Columbia U. Press, 1979.

R. Barlow, *Statistics: A Guide to the Use of Statistical Methods in the Physical Sciences*, John Wiley and Sons, 1989.

G. Cowan, *Statistical Data Analysis*, Oxford U. Press, 1998.

L. Lyons, *Statistics for Nuclear and Particle Physicists*, Cambridge U. Press, 1989.

PHYSICS 7361 SCHEDULE, SPRING 2012

GS = Grupen and Shwartz; F = Fernow; () = optional reading

Date	Reading, Tests, Quizzes	Homework Problems:
Jan 18 W	Introduction F Ch. 1.1 to 1.6	F Ch. 1: 2, 3, 5, 6, 7
Jan 23 M	Ionization and Multiple Scattering GS Ch. 1.1.1 to 1.1.4 F Ch. 2.1 to 2.4.1, 2.7	GS Ch. 1: 1, 2, 4 F Ch. 2: 1, 2, 4
Feb 6 M	Other Electromagnetic Interactions GS Ch. 1.1.5, 1.1.10, 5.4 to 5.7 F Ch. 2.4.2	GS Ch. 5: 3, 4 F Ch. 2: 7
Feb 13 M	Photon Interactions w/Matter GS Ch. 1.2 F Ch. 2.5	GS Ch. 1: 5 F Ch. 2: 8, 9
Feb 20 M	Nuclear Interactions GS Ch. 1.3 F Ch. 3.1 to 3.2	F Ch. 3: 2, 3, 4
Feb 27 M	Tracking Detectors GS Ch. 7 (F Ch. 9.1, 4 and 10.1, 2, 4)	GS Ch. 7: 1, 4, 5 F Ch. 9: 7; Ch. 10: 1, 3
Mar 9 F	Mid-term exam	
Mar 10-18	*Spring Break, no class	
Mar 19 M	Calorimetry GS Ch. 8 (F Ch. 11)	GS Ch. 8: 1, 2, 3 F Ch. 11: 1, 2, 3
Apr 2 M	Detectors for Particle Identification GS Ch. 9 and 10 (F Ch. 8)	GS Ch. 9: 1, 2, 4, 6; Ch. 10: 2, 4, 6 F Ch. 8: 3, 7
Apr 9 M	Electronics and Triggering GS Ch. 14 F Ch. 13	GS Ch. 14: 2 F Ch. 13: 4, 5, 6
Apr 16 M	Reconstruction and Analysis GS Ch. 15.1 to 15.6	GS Ch. 15: 1-4
Apr 30 M	Review	
May 3 Th	Final Exam, 11:30am - 2:30pm	