

QUANTUM FIELD THEORY in CONDENSED MATTER & HIGH-ENERGY PHYSICS
(Combination of Phys 503 & Phys 508)

BACKGROUND READING MATERIAL

_ The basic course reading material will be in the form of detailed course notes, currently being written.

This will be supplemented by using a number of books and articles. All of these books can be found online, as can the articles. References to the appropriate sections of this material will be given as we go along. Some of the more important texts and articles are:

Abers & Lee, *Physics Reports* **9**, 1-141 (1973)

Altland & Simons, “*Condensed Matter Field Theory*”, (CUP, 2010)

Mahan, “*Many-Particle Physics*” (Plenum, 1980)

Negele & Orland, “*Quantum Many-Particle Systems*” (Addison-Wesley, 1988)

Peskin & Schroeder, “*Intro to Quantum Field Theory*” (Addison-Wesley, 1995)

Pokorski, “*Gauge Field Theories*” (CUP, 1989)

Ryder, “*Quantum Field Theory*” (CUP, 1989)

Wen, “*Quantum Field Theory of Many-Particle Systems*” (OUP, 2007)

The two of these I will use most often are probably Negele and Orland, and Ryder. Note that the published dates I give for these books may be out of date – most of them are constantly being rewritten and reissued in new printings or new editions.