PHYSICS 663 Quantum Field Theory II Fall 2008

References: The following books will be on reserve in the Physics Library.

A) Introductory Texts:

1. F. Mandl: **Introduction to Quantum Field Theory**. This is a precursor to reference (4). (x^4=ict)
2. J.J. Sakurai: **Advanced Quantum Mechanics**. An excellent book and the traditional text for relativistic QM. (x^4=ict)
3. J.D. Bjorken and S.D. Drell: **Relativistic Quantum Mechanics**. A detailed account of Feynman's historic Physical Review articles on QED. ($g_{\mu\nu}$=(+,–,–,–))
4. F. Mandl and G. Shaw: **Quantum Field Theory**. A clear introductory text. ($g_{\mu\nu}$=(+,–,–,–))

B) Intermediate Texts: In general these are lengthier books in an attempt to be more comprehensive.

1. P. Ramond: **Field Theory: A Modern Primier**. A modern approach based on Feynman's path integral. ($g_{\mu\nu}$=(+,–,–,–))
2. J.D. Bjorken and S.D. Drell: **Relativistic Quantum Fields**. A complimentary text to their first volume deriving previous and new results from first principles. ($g_{\mu\nu}$=(+,–,–,–))
3. T.D. Lee: **Particle Physics and Introduction to Field Theory**. An example of T.D.'s inimitable style. (x^4=it)
4. M.E. Peskin and R.V. Schroeder: **An Introduction to Quantum Field Theory**. Our text. ($g_{\mu\nu}$=(+,–,–,–))
5. L.H. Ryder: **Quantum Field Theory**. Excellent modern approach well explained. Runner up as our text. ($g_{\mu\nu}$=(+,–,–,–))

C) Advanced Texts: These are much more mathematical.

1. N.N. Bogoliubov and D.V. Shirkov: **Introduction to the Theory of Quantized Fields**. Excellent text for Lagrangian field theory. ($g_{\mu\nu}$=(+,–,–,–))
2. N.N. Bogoliubov and D.V. Shirkov: **Quantum Fields**. Shorter version of above. ($g_{\mu\nu}$=(+,–,–,–))
3. L.S. Brown: **Quantum Field Theory**.
4. C. Itzykson and J.-B. Zuber: **Quantum Field Theory**. Fast and furious. ($g_{\mu\nu}$=(+,–,–,–))
5. D. Lurie: **Particles and Fields**. Functional approach interesting; many clarifying points. (x^4=ict)

6. C. Nash: **Relativistic Quantum Fields**. Introduces modern topics quickly. ($g_{\mu\nu}$=(+,–,–,–))

7. P. Roman: **Introduction to Quantum Field Theory**. Excellent first exposure to LSZ; rief with discussion. ($g_{\mu\nu}$=(+,–,–,–))

8. S. Schweber: **An Introduction to Relativistic Quantum Field Theory**. A classic. ($g_{\mu\nu}$=(+,–,–,–))

9. S. Weinberg: **Quantum Field Theory**, Vols. 1-3.

10. J. Zinn-Justin: **Quantum Field Theory and Critical Phenomena**.

D) Lecture Notes: T.E. Clark: **Introduction to Quantum Field Theory**. ($g_{\mu\nu}$=(+,–,–,–))

I have left some excellent texts off the list. Every text adds some aspect to the field theory picture. And, of course, the final chapter on field theory has yet to be written.