

## Syllabus for Physics 551

Fall Semester, 1997-98

Text: C. Kittel, *Introduction to Solid State Physics*, 7<sup>th</sup> edition, J. Wiley

1. Phonons, Chaps. 4 and 5 (2 weeks)
2. Free electron gas and energy bands, Chaps. 6 and 7 (2 weeks)
3. Crystal structure, reciprocal lattice and crystal binding, Chaps. 1, 2 and 3 (2 weeks)
4. Semiconductors, Chap. 8 (2 weeks)
5. Surfaces and interfaces, Chap. 19 (1 week)
6. Fermi surfaces and metals, Chap. 9 (1 week)
7. Superconductivity, Chap. 12 (2 weeks)
8. Diamagnetism, paramagnetism and magnetic resonance, Chaps. 14 and 16 (1 week)
9. Ferromagnetism and antiferromagnetism, Chap. 15 (2 weeks)
10. Non-crystalline solids, Chap. 17 (1 week)

Time allotted to topics is approximate. There will be a mid-term exam covering material from Chapters 1 - 8.