

# Condensed Matter Physics II

Mondays + Wednesdays, 2:15 pm

Lecturers: Kabir Ramola, Subodh R. Shenoy, Karthik Raman

## LIST OF TOPICS

### A. Advanced CMP Theory [19 Lectures] KR

1. Fermi Liquid Theory [4]
2. Second quantization and Hartree-Fock approximation [5]
3. Essentials of Band Structure [3]
4. Essentials of Classical Field Theory, Hydrodynamics and Renormalization [7]

### B. Special Topics in CMP [26 lectures] SRS + KVR

5. Magnetism [6] SRS
6. Superconductivity [10] SRS
7. Dirac materials: Graphene; Topological Insulators [10] KVR

Grades for Part A will be assigned as follows

50% Assignments

50% Midterm Exam