Spring term 2015/16

week		Statistical Physics/L		Statistical Physics/T
1.	26. 2.	Thermodynamics: System in thermostat, ideal gas, Gibbs paradox. Ensemble theory: Phase space, Liouville theorem, microcanonical ensemble.	22. 2.	
2.	4. 3.	Canonical ensemble: Ideal gas. Equipartition and virial theorems. Paramagnetism. Grand canonical ensamble.	29. 2.	
3.	11. 3.	Quantum statistical physics: Density matrix. Microcanonical and canonical ensemble. Particle in a box. Systems of indistinguishable particles.	7. 3.	
4.	18. 3.	Noninteracting systems I: Ideal Bose gas. Bose-Einstein condensation. Blackbody radiation.	14. 3.	
5.	25. 3.	Noninteracting systems II: Ideal Fermi gas, white dwarfs.	21. 3.	
6.	1. 4.	Interacting systems I: Cluster expansion, virial equation of state.	28. 3.	*(holiday)*
7.	8. 4.	Interacting systems II: Second virial coefficient of hard-core bosons. Interating systems.	4. 4.	
8.	15. 4.	Density-functional theory: grand potential as a functional, intrinsic free energy, Ornstein-Zernike equation.	11. 4.	
9.	22. 4.	Phase transitions I: Critical exponents, Landau theory, thermodynamic inequalities, Ginzburg criterion.	18. 4.	
10.	29. 4.	*(holiday)*	25. 4.	
11.	6. 5.	Phase transitions II: Exactly solvable models: Tonks gas, 1D Ising model, 2D ising model. Kosterlitz-Thouless transition.	2. 5.	*(holiday)*
12.	13. 5.	Phase transitions III: Renormalization group: 1D Ising model, flow in parameter space, fixed points.	9. 5.	
13.	20. 5.	Fluctuations I: Brownian motion: Einstein theory, Smoluchowski theory, Langevin theory.	16. 5.	
14.	27. 5.	Fluctuations II: Fokker-Planck equation, fluctuation-dissipation theorem, Onsager relations.	23. 5.	
15.	3. 6.	Fluctuations III: Nematodynamics, Kubo formula, time-dependent Ginzburg-Landau theory.	30. 5.	
16.	10. 6.	Stochastic thermodynamics.	6. 6.	