Course name	Physics 219, Statistical Physics
Meeting place, time	ISB ~~235~~ 231, TuTh 2-3:45PM
Instructor	G.-H. (Sam) Gweon
Office hours	We,Fr 11AM-12PM, OBA
Instructor coordinates	ISB 249, gweon@ucsc.edu, http://griffin.ucsc.edu
Textbook	*Statistical Physics of Particles*
	Mehran Kardar
References	*Equilibrium Statistical Physics*
	Plischke and Bergersen
	Statistical Physics of Fields, Mehran Kardar
	Thermodynamics, Fermi
	Statistical Physics, Landau, Lifshiftz and Pitaevskii
	Statistical Mechanics, Feynman
	Statistical Mechanics, S. K. Ma
	Statistical Mechanics, K. Huang
Course website	http://griffin.ucsc.edu/teaching/current

Course objectives Review thermal physics, gain solid understanding of statistical physics, learn to carry out simple and not-so-simple calculations for response functions, practice some numerical calculations. Be able to deal with the graduate qualifier level of problems with ease. Be able to understand the modern views of the statistical physics from the renormalization group point of view.

Evaluation The course evaluation will be based roughly half on homework (from 5 to 7 sets are expected), and the other half on the final exam (no midterm). If you do very poorly in either of these two categories, you may not pass this course, almost regardless of how you do in the other.

Emergency If highly unusual personal circumstances arise to prevent you from participating in core course activities, you should communicate with me as soon as you can, so that you will get the best consideration for makeup opportunities.

Get all help you can get. At a graduate level of physics, talking is very important way of communicating physics. So, talk out loud. Get all help you can get from me, your buddies, and yourself, by not being afraid to ask.

Lecture plan The following table is a rough plan for lectures. Changes are very likely to occur as we go along.

Lectures, while based on the textbook, may sometimes differ greatly from, and supersede, it.

Lec	Week	Day	Subject
1	1	4-3	Thermodynamics review
2	1	4-5	Thermo review, Probability
3	2	4-10	Probability
4	2	4-12	Kinetic theory of gas
5	3	4-17	Kinetic theory of gas
6	3	4-19	Classical statistical mechanics
7	4	4-24	Interacting particles
8	4	4-26	Interacting particles
9	5	5-1	Quantum statistical mechanics
10	5	5-3	Quantum statistical mechanics
11	6	5-8	Ideal quantum gas
12	6	5-10	Ideal quantum gas
13	7	5-15	Landau-Ginzburg theory
14	7	5-17	Fluctuations
15	8	5-22	Correlation functions
16	8	5-24	Renormalization group
17	9	5-29	Renormalization group
18	9	5-31	Linear response theory
19	10	6-5	Linear response theory
20	10	6-7	– Catchup, Review –
		6-12	Final exam (8-11AM)