

I have here lecture notes for my statistical mechanics course at PI. They are rough and filled with errors. They are also an attempt to deal with the question: Can one produce scientific material intelligible for both lecturing with a projector and for reading. I am not sure that one can do this. I even less sure that I can do this. Comments and criticism will be welcome.

The notes vary somewhat in tone. Part 1 skims over things in a rush. Other parts, e.g. most of part 2 and the earlier portion of part 6, includes standard material for standard first-year graduate level statistical mechanics courses. Other parts have material appropriate for theorists-to-be, including the path integral and renormalization materials in part 3 and the treatments of stochastic dynamics and Boltzmann equations in parts 4, 5, and 6. Parts 7 and 8 are reflections of my interest in the history of the theory of phase transitions.

The equations are sloppy with a mixture of fonts and font styles jumbled together with latex and keynote idioms. Equation construction has not received the attention it deserves from either Apple or Microsoft.

Many of the topics covered here are treated in a manner reflective of my 1999 text, *Statistical Physics*.

I want to thank my wife, Ruth, for offering much needed advice about the material in these notes.

Leo Kadanoff  
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