

Download Statistical Thermodynamics Notes

Statistical mechanics is one of the pillars of modern physics. It is necessary for the fundamental study of any physical system that has a large number of degrees of freedom. This note covers the following topics: Property relationships for pure substances and Mixtures, Thermodynamic Relations, Ideal Gas Mixtures, Combustion Thermodynamics, Gas Power Cycles, Vapour Power Cycles, Refrigeration Cycles, Reciprocating Compressors, Compressible Flows and Steam Nozzles. 16. Unified: Thermodynamics and Propulsion Prof. Z. S. Spakovszky. L A TEX editing by D. Quattrochi Notes by E. M. Greitzer, Z. S. Spakovszky, I. A. Waitz Contents 1. The Fundamentals of Statistical Mechanics 1 1.1 Introduction 1 1.2 The Microcanonical Ensemble 2 1.2.1 Entropy and the Second Law of Thermodynamics 5