

4 Fundamentals of Continuum Thermomechanics

In this Chapter, the laws of thermodynamics are reviewed and formulated for a continuum. The classical theory of thermodynamics, which is concerned with simple compressible systems, is discussed in sections 4.1-4.3, wherein are discussed the concepts of entropy, entropy production and entropy supply, the second law, the notions of reversibility and irreversibility, the thermodynamic potential functions (internal energy, enthalpy and the Gibbs and Helmholtz free energies). Continuum thermomechanics is discussed in section 4.4.

