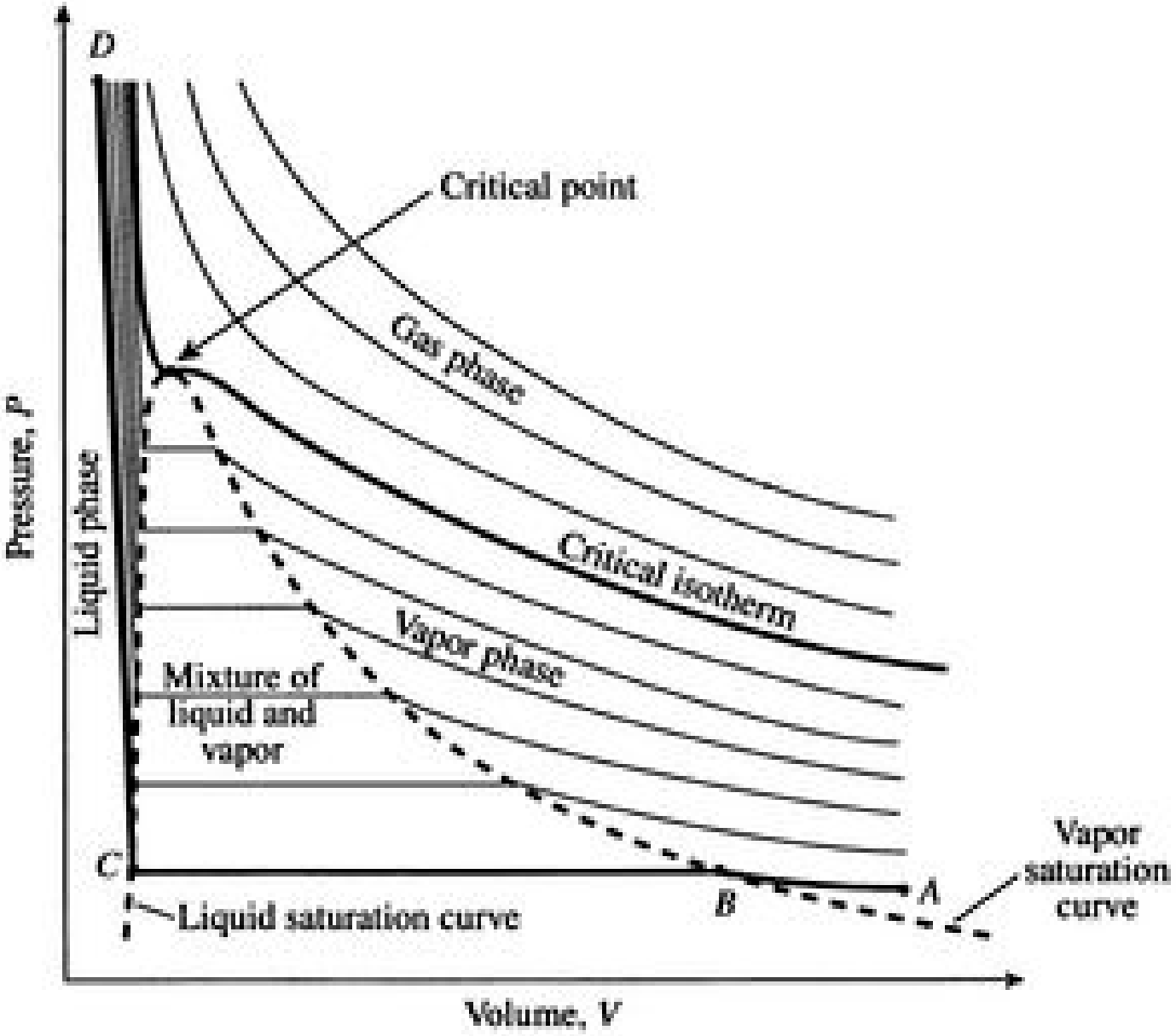
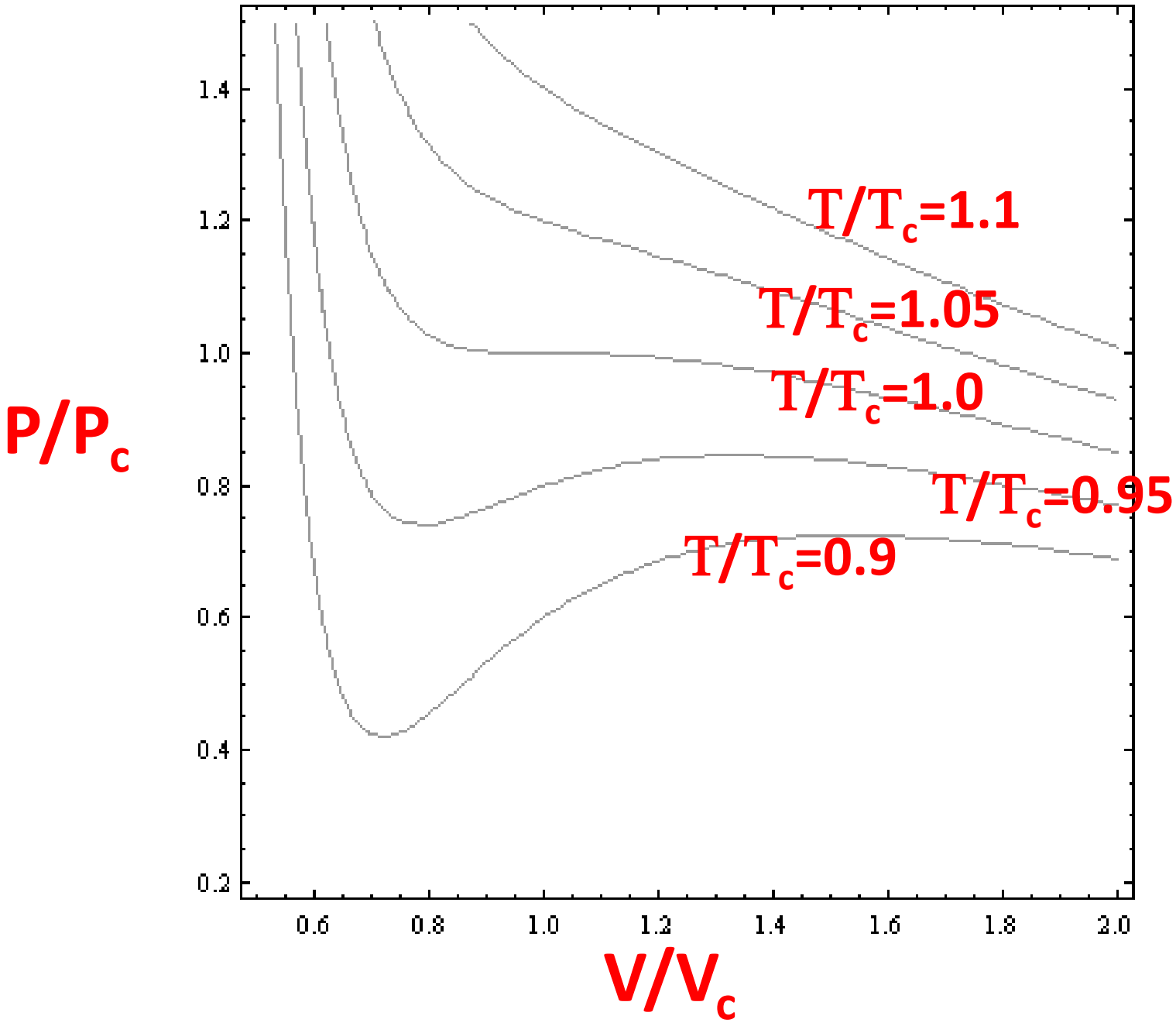
P-V Diagram of Realistic Liquid / Vapor



Van der Waals Isotherms



The Law of Corresponding States in the van der Waals Gas

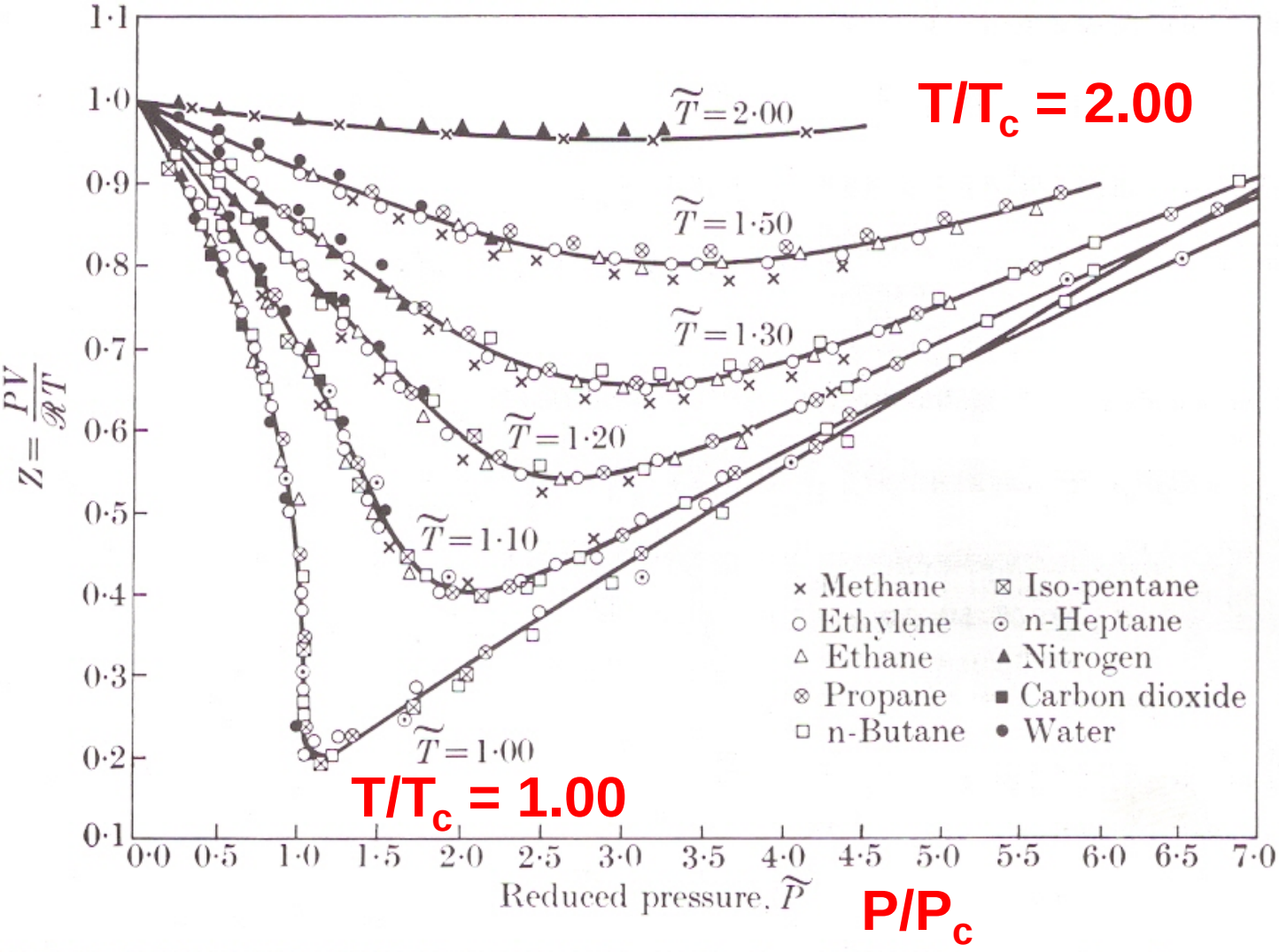
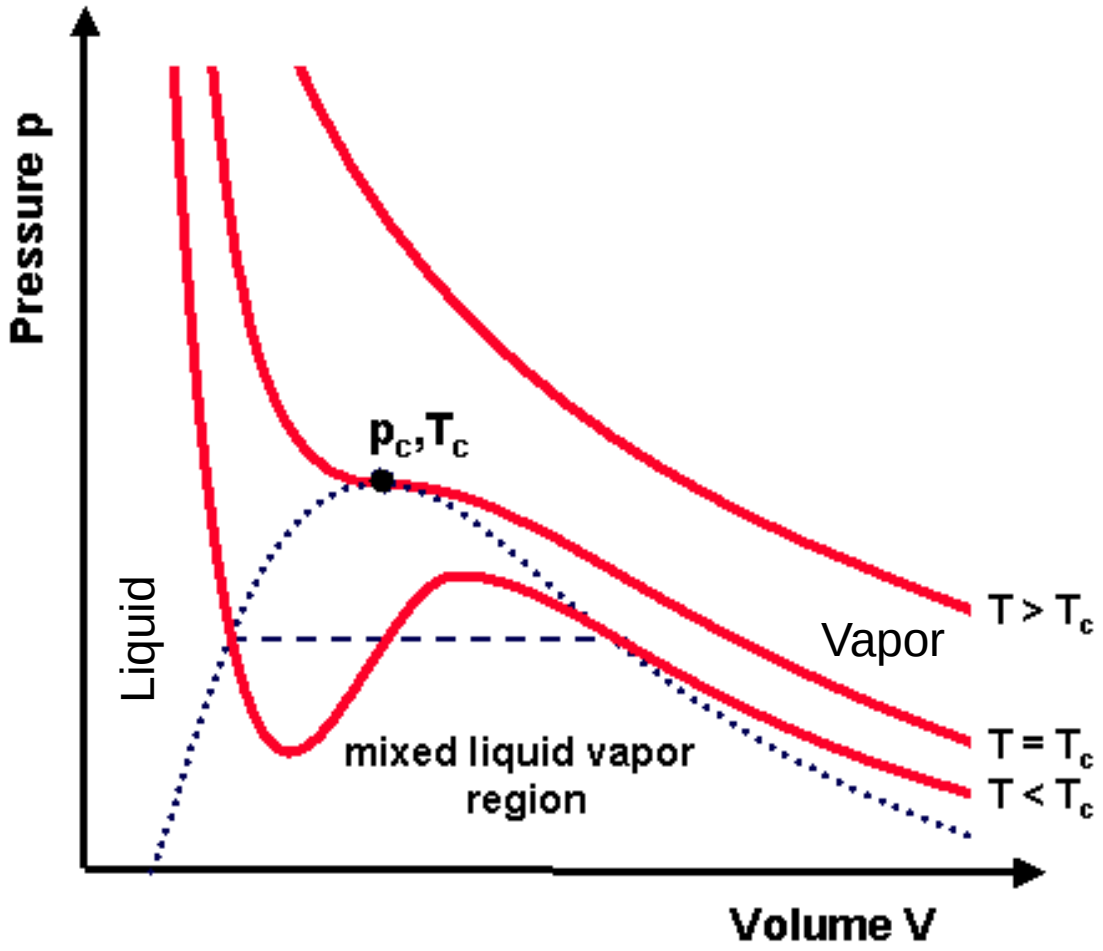


FIG. 5.3. Dependence of the compressibility ratio $Z \equiv PV/\mathscr{R}T$ upon reduced pressure $\tilde{P}$ for different reduced temperatures $\tilde{T}$. The fact that the data for a wide variety of fluids fall on identical curves supports the law of corresponding states. After Su (1946).

H. E. Stanley, Intro. To Phase Transitions and Critical Phenomena, p. 73

Van der Waals isotherms



Equal Area Isobar Construction