Required material from Cook & Lawn,

Mechanical and Thermal Properties of Matter

Much of the required material is covered in the notes on the net

Chapter 1. Mechanics
    All except 1.6. Quantitative.

    All, but not in great detail nor quantitative

Chapter 3. Elasticity.
    All, quantitative.

Chapter 4. Plasticity.
    All, but not in great detail nor quantitative

Chapter 5. Brittle Fracture.
    Only qualitative

Chapter 6. Viscosity.
    Not required

Chapter 7. Surface energies
    Quantitative only for liquids

Chapter 8. Thermal properties
    All, quantitative