Table of contents provided by Syndetics

- Engineering materials and their properties
- Price and availability of materials
- Elastic moduli
- Bonding between atoms
- Packing of atoms in solids
- Physical basis of Young's modulus
- Case studies in modulus-limited design
- Yield strength, tensile strength and ductility
- Dislocations and yielding in crystals
- Strengthening methods and plasticity of polycrystals
- Continuum aspects of plastic flow
- Case studies in yield-limited design
- Fast fracture and toughness
- Micromechanisms of fast fracture
- Case studies in fast fracture
- Probalistic fracture of brittle materials
- Fatigue failure
- Fatigue design
- Case studies in fatigue failure
- Creep and creep fracture
- Kinetic theory of diffusion
- Mechanisms of creep and creep-resistant materials
- The turbine blade case studies in creep-limited design
- Oxidation and corrosion
- Oxidation of materials
- Case studies in dry oxidation
- Wet corrosion of materials
- Case studies in wet corrosion
- Friction and wear
- Case studies in friction and wear
- Design with materials
- Final case study materials and energy in car design
- Appendices Symbols and Formulae
- References
- Index
- Complete solutions manual