

Elasticity: Links to additional reading

*These links are optional reading, different sources.
Goal is to get a wider overview and perspective!*

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1. More information about: [General Continuum Mechanics](#)
2. [Vectors](#) and [Tensors](#) as related to sections 1 and 2.
3. [Cauchy Stress Tensor](#) as related to Section 3, with [States of stress](#) and (in detail, beyond basic elasticity): [Combined stress states](#)
4. [Deformation](#) as related to Section 4, and
5. Material theory (self search ...), as related to Sections 5 and 6 ...
6. More general overview: [Rheology](#)
7. Plastic materials: [Plasticity](#)
8. Visco-Elasticity: [Visco-elasticity](#)
9. Material failure/damage [Material Failure Theory](#)
10. Failure/limit stress criteria for different materials [Failure Criteria](#)
11. Alternative course: [Mechanics of Materials](#) (by Dr. Calvin Rans)
12. **Books:**
 - a **Elasticity – Theory, Applications, Numerics by: M. H. Sadd**
This book covers the course, but has a slightly different nomenclature; it also reaches towards more advanced elasticity theory issues (not needed), so you also can use it in future for more advanced courses.
Chapter 1 except 1.9
Chapter 2 except 2.6 & 2.7
Chapter 3 (traction- \Rightarrow stress-vector, spherical = isotropic) exc. 3.7
Chapter 4 except 4.4
Chapter 5 (could use all, don't need any ;))
Chapter 6 only 6.1 & 6.5
Chapter 7 only 7.1 & 7.2
Chapter 9 (general reference, making the connection to real life) ... also take a look at: Tresca, von Mises, and general material behavior.
 - b **Principles of Continuum Mechanics by J. N. Reddy**
This book covers more than the course, but has a different nomenclature; it also contains much advanced continuum theory issues (not needed), so you also can use it in future for more advanced courses.
Chapter 2 Very detailed introduction to vectors and tensors
Chapter 3.1-3.2 Kinematics and strain, and 3.3.3
Chapter 4.1-4.3 Stress-vector/-tensor, eigenvalues & transformation
Chapter 5.3 Balance of momentum and angular momentum
Chapter 6.1-6.2 Linear elastic material behavior, and 6.3 Fluids
Chapter 7.4 Solid Mechanics
 - c **Elasticity by J. R. Barber**
This book covers the basic content, but very dense; use sections 1 and 2 and parts of 3 and 4; the nomenclature is somewhat different from what is shown during the lectures.
13. [Dutch Reading Material](#) (old script 095 - v.2007) [Exercises Secs. 1.-5.](#) [Sec. 6: Materials](#)