# Syllabus GEOV276 Theoretical seismology

## From Auld's textbook

- Chapter 1. Particle displacement and strain: 1-32
- Chapter 2. Stress and the dynamical equations: 33-55
- Chapter 3. Elastic properties of solids: 57-99
- Chapter 6. Acoustic plane waves in isotropic solids: 163-171
- Chapter 7. Acoustic plane waves in anisotropic solids: 210-236
- Chapter 9. Reflection and refraction: 1-11, 21-30

## Additional lecture notes

- Seismic ray theory (based on pages 234-237, 242-246 and 258-260 in Pujol, 2003).
- Finite difference method (based on pages 85-88 in Schuster, 2017).
- Integral equation method (based on pages 109-112 in Schuster, 2017)

## References

Auld, B.A., 1990. Acoustic fields and waves in solids. Krieger Publishing Company, Malabar, Florida. Volumes 1 (*available as ebook*) and 2.

Pujol, J., 2003. Elastic wave propagation and generation in seismology. Cambridge University Press.

Schuster, G.T., 2017. Seismic inversion. SEG, Investigations in Geophysics, volume 20.