

Ultrasonics 2025 final project:

Write a report (max 5 pages) about your wave mode and prepare a 10 min presentation on the subject. **A compulsory practice session for the presentation will also be held on 7.5.**, where you will give your presentations and receive feedback for possible improvements. **The final presentation date is 14.5., and the deadline for final reports will be announced soon.**

The final project will constitute 40 % of the course grade; 45 % from the written report, 35 % from the oral presentation and 20 % from the practice session.

The following intermediate deadlines will serve to better guide your work:

- **16.4.** Theoretical derivation done
- **23.4.** List of applications (1-3) with sources, and visualization of wave mode
- **30.4.** Presentation slides

Presentations/reports must include:

- The underlying differential equation
- Assumptions (e.g. propagation medium, boundary conditions)
- Derivation of equation for pressure $p(r,t)$ and/or particle displacement $u(r,t)$ (in the presentations, it is sufficient to only show the main steps)
- Dispersion and attenuation: Is the wave mode dispersive and/or attenuating? How (equation + dispersion curve)?
- Schematic representation of the particle motion and video/animation/simulation of the wave mode
- 1-3 examples of applications, where the wave mode is used

Your written reports will be graded on clarity, thoroughness, difficulty, professionalism, and the fulfilment of the criteria above.

Your presentations will be graded on clarity, elegance, difficulty, general impression, and the fulfilment of the criteria above.

Presenters and wave modes

Antton	Shock waves
Joel	Lamb waves
Kristina	Scholte waves
Mikko	Rayleigh, leaky Rayleigh waves