Final exam questions

Subject group name: **Fluid Mechanics elective – Aero-Elasticity**
Neptun code: ZVEGEÁTNW22

Credit points: 3

Subject in this subject group:

- **Aero-Elasticity** (BMEGEÁTNW22)

Program: Mechanical Engineering Modelling, MSc (2N-MW0)

Specialization: Fluid Mechanics

Responsible person:

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You can check the current subject forms at the Educational Portal of the Faculty of Mechanical Engineering.

https://oktatas.gpk.bme.hu/

Always check the for updates at edu.gpk.bme.hu before preparing for the exam, especially if the subject group contains at least one subject from your final semester!

Valid from 01 September 2022

Dr. Tamás Kalmár-Nagy

associate professor

1. Bifurcations of one-dimensional systems.
2. Planar linear systems.
3. Two-dimensional nonlinear systems, phase portrait, linearization.
4. Limit cycle, Hopf bifurcation.
5. Analytical and numerical solutions of dynamical systems.
6. Divergence and flutter instability.
7. Galloping and vortex-induced vibrations.
8. Possible causes of damping and their modeling.
9. Calculation/design of two-dimensional structure for flutter.
10. Flutter derivatives and their determination.