**Program Midterm Exam**

of the discipline “Fluid and Gas mechanics” (3 course)

 Equation of hydrostatics in vector form and Cartesian coordinates. Barotropic balance in the field of potential volume forces. Integral of hydrostatics. Equation of balance an incompressible fluid of gravity force. Barometric formula in the case of the isothermal balance. Balance of incompressible gravity fluid. Archimed’s law.

 Euler’a equations in vector form and in Cartesian system of coordinates. Gromeka-Lamba’s equation of barotropic motion of an ideal gas in the potential field of volume forces. Theorem and Bernoulli’s integral. Special cases of Bernoulli’s integral. Hydrostatic and dynamic pressures. Pressure coefficient.

 Equation of energy balance of ideal perfect gas. The energy integral. Inner energy and enthalpy. Maier’s formula. Entropic’s formula. Formula of Poisson’s adiabat. Sound velocity. Newton’s and Laplace’s formulas of sound velocity. Mach number and its seans.

 **List of literature:**

1. Седов Л.И. Механика сплошной среды.-М.: Наука, 1973.

2. Лойцянский Л.Г. Механика жидкости и газа.-М.: Наука,1987