

Department of Energy and Industrial Apparatus
Section of Fluid Mechanics, Water Turbines and Pumps
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IDE – SELECTED PROBLEMS OF FLUID MECHANICS

PLAN OF LECTURES

Hour No.	Topic of the lecture
1	Review of the Principles of Fluid Mechanics
2	Principles of the Theory of Turbo-machinery
3	Rotors and Guide Vanes in Turbo-machinery
4	Principles of the Turbulent Flow Theory
5	Turbulent Boundary Layer
6	Fluid – Solid Interaction – Concept of Entrained Mass of Fluid
7	Cavitating Flows
8	Influence of Cavitation on the Operation of the Fluid Flow Machinery
9	Computation of Potential Flows
10	Computation of Viscous Flows – Finite Difference Method
11	Computation of Viscous Flows – Finite Element Method
12	Computation of Viscous Flows – Finite Volume Method
13	Modelling of Turbulence In Computations
14	Modelling of Flows with Free Boundaries
15	Written Test (see List of Questions – file IDETest)

Literature

1. Puzyrewski R., Sawicki J.: *Podstawy mechaniki płynów i hydrauliki*, PWN Warszawa 1998
2. Gryboś R.: *Podstawy mechaniki płynów*, tom I, PWN Warszawa 1998
3. Chmielniak T.: *Podstawy teorii profilów i palisad łopatkowych*, Ossolineum 1989
4. Puzyrewski R.: *Podstawy teorii maszyn wirnikowych*, Ossolineum 1992