

ENGLISH SUMMARY

UDK 577.35:612.76:796/799

RANTA, MATTI A., Biomechanics

The article treats biomechanics as a science of its own and how it is based on other sciences. Special attention is paid to the connections of biomechanics with sport and to the mathematical models in analyzing some athletic events.

UDK 624.01/07:001.18

MIKKOLA, MARTTI, Structural Mechanics in the Future

Evaluations of the development of some branches of structural mechanics are presented in the light of the present knowledge. The branches considered are the constitutive equations of materials, and the analysis of nonlinear problems and their numerical solution. The role of structural mechanics in the structural design process and the curriculum of structural mechanics in university teaching are briefly discussed.

UDK 624.07:519.21

HANNUS, MATTI, The design of structures in respect to the most probable failure

The article deals with the design of structures based on stochastic analysis of the reliability of the structure. The effecting factors are treated as stochastic variables. The values of the variables used in design calculations are defined so that they belong to the combination giving the greatest probability for the structure to reach the limit state. Additionally the properties of the proposed design method are discussed and some practical points of view are given.