Modern problems of applied mathematics and informatics

Computer practice

Instructor: Anna A. Nasedkina, PhD
Southern Federal University
Department of Mathematical Modelling
e-mail: aanasedkina@sfedu.ru
Office. +78632975282
Mob. +79034320292

Course objective: The course is aimed at studying various mathematical and physico-technical models of practical importance, gaining knowledge of finite element technologies to solve problems of mathematical physics, and making use of modern computational software with advanced capabilities for analyzing real-world problems. By going through example problems the students will learn how to use FEM packages, such as FlexPDE and ANSYS.

Learning outcomes: By the end of this course students are expected be able to

- demonstrate ability to use technology of finite element method for solving problems of mathematical physics;
- use modern finite element software (FlexPDE, ANSYS) for numerical solution of problems of mathematical physics;
- implement heat transfer, structural, modal and harmonic analyses in FlexPDE finite element program;
- implement heat transfer, structural, modal, harmonic, coupled field analyses in heavy finite element packages, such as ANSYS.