Faculty prepares for its specialties:

Bachelor: 6.04020100 6.04020300 Mathematics Physics

Specialist: 7.04020101 7.04020301 Mathematics Physics

Master: 8.04020101 8.04020301 Mathematics Physics

Mathematics

Producing departments:

Department of mathematical analysis and probability theory (headed. Klesov OI);

Department of differential equations (headed. Doudkin ME);

Department of Mathematical Physics (headed. Ivasyshen SD);

Preparations specialists in analyzing and forecasting economic activity of the market economy, construction and calculation of mathematical models of commercial, financial institutions and private events. Students have the opportunity to learn computer modeling of physical processes; synergy and catastrophe theory; theory of self-organizing complex systems and dynamic chaos; theory of nonlinear phenomena; examine the model of the financial assets and indicators for discrete and continuous time; probability and statistical ideas and methods of stochastic calculus in the analysis of market risk; Development of mathematical problems and algorithmic support of information systems security.

Insurance and Financial Mathematics

Master's Program "Insurance Financial Mathematics i" is included in the specialty 8.04020101 "Mathematics" in 2014 at the department of mathematical analysis and probability theory FMF.

Main courses:

The mathematical theory of risk,

Mathematical models of the economy,

Pricing and hedging financial instruments

Stochastic models of insurance,

Fundamentals of stochastic personal property insurance.

Specialization can be compared with Master's degree universities in the US and Europe as:

-Insurance And Risk Management;

-Actuarial Science / Actuarial Management;

-Financial Engineering / Quantitative Finance.

PHYSICS

By issuing department:

Department of General and Theoretical Physics (Head Acad. of Sciences of Ukraine VM Loktev);

Department of General and Experimental Physics (Head Corr. Sparrow Pedagogical Sciences of Ukraine YI);

Department of Physics and Solid State Physics (headed. V. Gorshkov).

The faculty trains specialists in fundamental and applied problems in various fields of modern physics - from aero and hydrodynamics to nuclear physics and particle using the methods of mathematical and computer modeling and the analysis and forecasting economic activity of the market economy. Students have the opportunity to learn, advanced methods of computer modeling of physical processes; methods and means of scientific experiment; basics methods of computational physics, synergy and catastrophe theory; theory of self-organizing complex systems and basics of dynamic chaos; theory of nonlinear phenomena; , a model that describes the dynamics of financial assets and indicators for discrete and continuous time.

The Faculty research work following areas:

nanotechnology;

solid state physics;

chaos theory and nonlinear phenomena;

physics of magnetic phenomena;

theoretical physics;

quantum chemistry methods to calculate the dynamics of complex molecules;

Numerical methods for determining optimal regimes controlled synthesis of nanoparticles and surfaces with desired morphology;

methods of stabilizing signal in optical communications in turbulent zone;

spectroscopy of nanoscale films and composites on the basis of silicon-organic polymers.

Specialty "Physics" carried out fundamental training of the main areas of modern physics, solid state physics, physics of magnetic phenomena, physics of phase transitions, theoretical physics, nuclear and elementary particles.

Masters students up to date research areas of experimental and theoretical physics, nanotechnology, astrophysics, solid state physics, the theory of magnetism, information technology in physics, semiconductor physics, optics.