Welcome to the international office of FMF

Written by Administrator
Wednesday, 07 September 2011 18:24 - Last Updated Saturday, 21 November 2020 18:11

Faculty of Physics and Mathematics

The faculty is founded in 1996.

The faculty carries out training of bachelors, specialists and masters in Physics and Mathematics specialties. Also at the faculty there is training for Doctor of Philosophy Degree and Doctor of Science Degree.

The dean of the faculty is Doctor of technical sciences, professor Vanin V.V. (tel. (044) 204-82-51).

The Faculty of Physics and Mathematics was established in 1996 on the basis of the departments of fundamental training on the initiative of the rector of the university, academician MZ Zgurovsky.

Physical and mathematical training, which is the basis for the formation of scientific and engineering knowledge, has always been a priority at the Kiev Polytechnic Institute from day one its existence. At different times, scientists with a world-famous name worked and headed the departments of fundamental training here: MP Kravchuk, IV Skrypnyk, AA Smirnov, VELoshkarev, YBVul, GG De-Metz, O.G. Goldman, FP Yaremchuk, SHG Gordeladze, VA Zmorovich, OS Smogorzhevsky, VA Linnyk, SD Herzriken, academician AM Samoilenko, laureate of the State Prize Prof. VV .Buldygin.

Seven departments became the base of the faculty:

· Department of Mathematical Analysis and Probability Theory (Head of the Department Honored Worker of Education of Ukraine, Academician of the Academy of Sciences of Ukraine, Professor, Doctor of Physical and Mathematical Sciences OI Klesov)

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· Department of Differential Equations (Head of the Department, Academician of the Academy of Sciences of Ukraine, Professor, Doctor of Physical and Mathematical Sciences ME Dudkin)

· Department of Mathematical Physics (Head of the Department Professor, Doctor of Physical and Mathematical Sciences VM Gorbachuk)

· Department of General Physics and Solid State Physics (Head of the Department Professor, Doctor of Technical Sciences VY Kotovsky)

· Department of General and Theoretical Physics (Head of the Department Honored Worker of Science and Technology of Ukraine, Academician of the National Academy of Sciences of Ukraine, Professor, Doctor of Physics and Mathematics of Ukraine VM Loktev)

· Department of General and Experimental Physics (Head of the Department Honored Worker of Science and Technology of Ukraine, Corresponding Member of APNU, Professor, Doctor of Physical and Mathematical Sciences YI Gorobets)

· Department of Descriptive Geometry, Engineering and Computer Graphics (Head of the Department Associate Professor, Candidate of Pedagogical Sciences GO Gnitetska)

The first dean of the faculty was Academician of the NAS of Ukraine VG Baryakhtar, since 2007 the faculty is headed by Honored Worker of Education of Ukraine, Academician of the NAS of Ukraine, Professor, Doctor of Technical Sciences VV Vanin.

The faculty employs world-renowned scientists: Academicians of the NAS of Ukraine VM Loktev, Corresponding Member of the Academy of Pedagogical Sciences YI Gorobets, Academician of the Academy of Sciences of Ukraine, member of the Ukrainian, American, Belgian, Australian, Edinburgh, London Mathematical Societies, Honored Worker of Education of Ukraine BUT. Virchenko.

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Well-known scientists of scientific institutes of the National Academy of Sciences of Ukraine, well-known universities and research laboratories of Europe and the USA are involved in the educational and scientific training of bachelors, masters and doctors of philosophy of the department.

Among the teachers of the faculty: 35 professors, doctors of sciences, 148 associate professors, candidates of sciences.

The faculty conducts scientific work in the following areas:

- Research in probability theory, mathematical statistics and the theory of random processes
- Research in mathematical analysis: integral transformations and theory of special functions, functional analysis and its application to boundary value problems of mathematical physics, theory of functions, harmonic analysis
- Statistical analysis of the quality of tests in higher mathematics
- Research on differential equations
- Research in materials mechanics
- Development of mathematical methods for the study of stochastic systems and boundary value problems of mathematical physics;
- Analytical research methods for the theory of parabolic equations
- Investigation of deterministic chaos in dynamical systems
- Development of the theory of nonlinear dynamics of magnetization distributions in crystals in external alternating fields
- Geometric modeling of nonlinear dynamics processes by fractal geometry methods
- Geometric modeling of technological processes in aircraft construction
- Geometric modeling of aircraft surface formation at the design stage in the conditions of modern integrated computer technologies
- Research of qualitative and spectral characteristics of dynamic systems
- Investigation of dynamic phenomena in multiparticle systems that determine their physical properties by computer simulation methods
- Comprehensive study of functional nanocomposites and thin films for use in optical and sensor electronics, in particular as electrically active elements, functional thin layers, light-emitting materials, visualization, light indication and gas sensors
- Investigation of optical, electrical and magnetic properties of nanopowders, nanocomposites, thin films, polycrystalline and single-crystal SiC materials of different polytypes doped with donor and / or acceptor impurities, for further application of these materials in

spintronics, optoelectronics, solar energy
   - Development of methods for controlled synthesis of periodic one-dimensional nanoscale metallic and semiconductor structures as elements of modern nanoelectronics, establishment of physical bases for the formation of 3D-acoustic metamaterials with the desired spectral characteristics
   - Geometric modeling of working bodies of tillage implements of agricultural production
   - Geometric modeling of multiparameter processes and systems

Specialties for which the faculty trains staff:

   - Bachelor: 104 Physics and Astronomy, 111 Mathematics
   - Master: 104 Physics and Astronomy, 111 Mathematics

Educational levels:
   - Bachelor of Physics and Astronomy
   - Bachelor of Mathematics
   - Master of Physics and Astronomy
   - Master of Mathematics

Educational programs:
   - Educational program "Insurance and Financial Mathematics", "Mathematical and Computer Methods in Modeling Dynamic Systems"
   - Educational program Computer simulation of physical processes
   - Master's studies of students are performed in modern areas of mathematics and physics:
   - probability theory,
   - stochastic processes,
   - mathematical forecasting,
   - theory of differential equations,
   - phenomena of nonlinear dynamics and chaos theory,
   - mathematical modeling in economics,
   - nanotechnology,
   - astrophysics,
   - theory of magnetism,
   - solid state physics,
   - information technology in physics,
   - semiconductor physics,
   - optics,
   - experimental physics,
   - geometric modeling of objects,
   - phenomena and processes,
   - geometric support of automated design and production preparation systems.

The chair holds scientific research projects in following courses:

- Creation, investigation and application of Green's matrixes of boundary value problems and fundamental solutions of Cauchy problems;
- Development of methods and algorithms of asymptotically solving operators;
- Deterministic chaos in not ideal dynamic systems and systems with limited excitation;
- Nonlinear dynamics of heterogeneous distributions of magnetization in multisublattice magnetically ordered crystals in external variable fields, structural phase transformations, methods of perturbation theory.

The Descriptive geometry, engineering and computer drawing chair
The chair holds scientific research projects in following courses:

- Geometrical modelling and projecting of products' surface, technological processes and rigging in aircraft and mechanical engineering;
- Geometrical modeling of multicriteria problems of science and technology;
- Modeling of processes of agricultural production for the optimization of agricultural tools and equipment designing;
- Novel technologies of teaching, distance education.