



National Aviation University

Kosmonavta Komarova Ave., 1
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Національний Авіаційний Університет
засновано у 1933



**The National Aviation University
was founded in 1933.
Since 2010 Self-Governing (Autonomous)
Research National University**



The National Aviation University is a powerful aviation higher educational institution, that is well-known not only in Ukraine, but also far abroad. Thousands of its scientists and lecturers, hundred thousands of graduates have made a considerable contribution to the development of national and world science, techniques and industry; they became the active creators of scientific and technical progress.

15 Institutes, 2 Faculties, 7 Colleges, 2 Lyceums, 1 Academy.

More than 50,000 students from 49 countries.

More than 3,000 academic staff, including
15 Academicians and Corresponding Members
of the National Academy of Sciences of Ukraine,
270 Doctors of Sciences, Professors
900 Candidates of Sciences, Associate Professors.
80 State Prize winners and
Honored Workers of Science and Engineering.

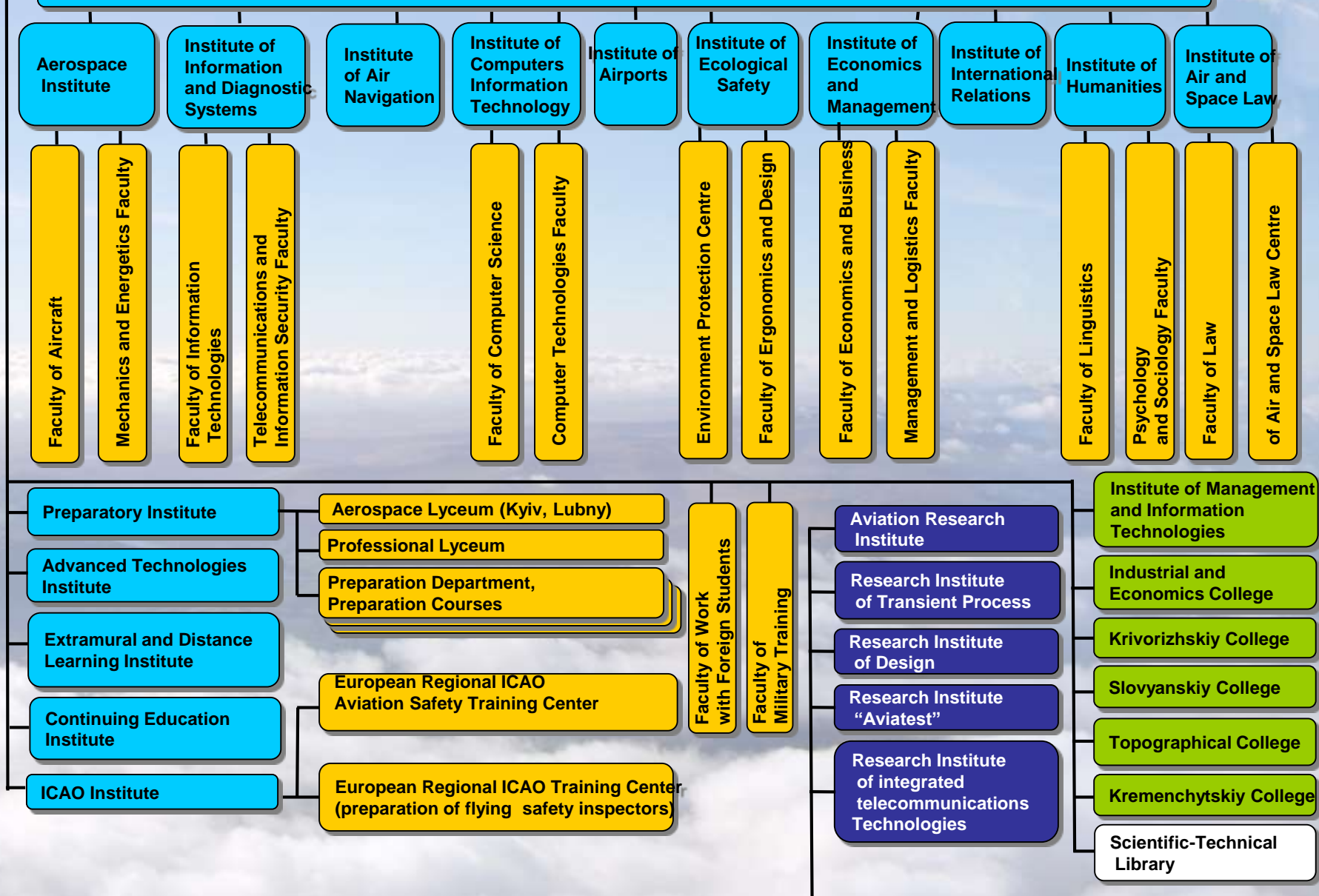




UNIVERSITY STRUCTURE



NATIONAL AVIATION UNIVERSITY





The University science development strategy principles are:

- maximum use of potential, accumulated in the past; saving and further development of the most important research fields;
- constant and efficient monitoring of the world science achievements (in aviation at the first place), searching and promoting new research fields. Creating an enabling environment for informational search;
- organizational restructuring of science management, creating new, more efficient and mobile scientific departments, opening scientific institutes to focus efforts on practical fields;
- closed cooperation with the National Academy of Science of Ukraine, other scientific institutions, departments, creating joint scientific teams, attracting specialists of NAS of Ukraine to work and teach at the University;
- productive cooperation with universities and scientific centers around the world;
- creating appropriate conditions for new generation young scientists bringing up.





Responsible Persons for the NETCENG Project implementation in the National Aviation University



Volodymyr KHARCHENKO

NAU Vice Rector for Scientific Work,
Doctor of Sciences (Doct. Eng.), Professor,
Honoured Figure of Science and Engineering of Ukraine,
the State Prize of Ukraine Winner in the area of
Science and Engineering



Dmitry PRUSOV

Senior Research Analyst,
Candidate of Sciences (PhD.Eng.),
Associate Professor

coordinator Проекта NETCENG
in the National Aviation University



AEROSPACE INSTITUTE



Highly qualified scientific and pedagogical staff counts **118 teachers, including 25 professors and 77 associate professors**. Lessons are held in the unique hangar and specialized lecture rooms, which contain different types of planes and helicopters, operating stands and stimulators.

Institute trains specialists in all educational qualification levels for use in the **manufacture, maintenance and repair of aircraft and aircraft engines, gas turbines and compressors, automation and computer-integrated technologies, energy management, quality, standardization and certification**.

The institute trains specialists in the field "Aviation and Cosmonautics" in English. Students are trained in Lyon polytechnic school (France) and the Dresden Technical University (Germany).

Branches of the Aerospace Institute's departments are working in the enterprises of the company "**Ukrtransgaz**", factories "**Aviant**", civilian aviation № 410 and ASTC "**Antonov**" where students gain outstanding experience and knowledge from leading specialists. Here students pass their productive practices, work on their bachelor and master projects.





AEROSPACE INSTITUTE

Mechanics and Energy Faculty

Machines Engineering Department



The main courses taught at the department are:

"The Theory of Mechanisms and Machines ", " Machine elements ", "Applied Mechanics", "Technical Mechanics", "Design Fundamentals", "Material Science“.

Training of post-graduate students provides in the fields:

"Friction and deterioration in machines", "Material Science" and “Machines Engineering”.

Investigations are carried out in the laboratory of the "Newest Tribotechnology" that is equipped the plant friction, fatigue, metallographic and electron microscopes, etc.

Over the past 10 years, at the Department have been prepared 3 Doctor of Sciences thesis, and 9 Candidate of Sciences thesis.

The investigations received the State Prize of Ukraine in science and technology and scientific discovery.

At the department regularly publishes scientific and technical journal "Problems of friction and deterioration".





AEROSPACE INSTITUTE

Mechanics and Energy Faculty

Machines Engineering Department



- Today, for the preparation of masters and PhD students new courses "Nanomaterials", "Nanotrybology", "Biomineralization" are being preparing.
- In carrying out scientific research, testing and implementation of department collaborates with institutions of NAS of Ukraine, universities and factories: Institute of Metal Physics of NASU, Instytute of Materials Science of NASU, Instytut for strength problems of NASU, National Technical University of Ukraine "KPI", Zaporizhzhya National Technical University, Lutsk Repair Plant, SE LRZ "Motor", DB "Pivdenne".
- The academic graduates work in such institutions and companies as: National Academy of Sciences, Institute of Materials science, SE "Antonov", ARP - 410 CA .





INSTITUTE OF INFORMATION AND DIAGNOSTIC SYSTEMS



— 128 lecturers and 1716 students

Students are being trained using advanced technology, including, LabView, LabCAD, Electronics Work Bench etc.. Training is carried on computerized systems using multimedia and network technology, modern laboratory equipment, such as diagnostic systems, modern equipment, CISCO, protection systems and facilities, and other systems of CCTV and other.

Students of the institute are trained in specialized laboratories and training classes, established together with leading national and international companies such as Ukrmetrteststandard, CISCO, Microsoft, National instruments and others.

The Institute comprises 7 departments, among which are targeted :

- Applied Mathematics;
- Applied Physics;
- Information Protection Means;
- Information Security Technology;
- Information Measuring Systems;
- Computerized Data Protection Systems.





INSTITUTE OF INFORMATION AND DIAGNOSTIC SYSTEMS

Applied Mathematics Department

The Department provides teaching bachelors and the OCD "Master" on the Direction "Applied Mathematics"

with a specialization in:

- "Applied Physics",
- "Telecommunication",
- "Geoinformation Systems and Technologies",
- "Safety information and communicational systems",
- "Technical protection of information systems",
- "Management of Information Security".

Postgraduate training in specialty "Information Technology".

The main research directions :

Automated data processing system;

Mathematical modeling of physical chemical, biological systems and processes.





Cooperative Work of the Department

The Department of Applied Mathematics actively cooperates with training and production center of unmanned aircraft of the National Aviation University "Virage" (the topic of research is ***Development of an automated data processing system with cameras of unmanned aircraft***).

Research activities carried out in collaboration with scientists of the Institute of Biochemistry of National Academy of Sciences of Ukraine (the topic of research is ***Mathematical modeling of the transmembrane transport of calcium into the smooth muscle cells***) and Emory University, Department of chemistry, USA (research topic - ***Mathematical modeling of catalytic oxidation of water***).





INSTITUTE OF AIR NAVIGATION



Institute of Air Navigation is an educational and research unit of the National Aviation University, which trains highly qualified aviation professionals, conducts research and scientific and technical activities in high-tech and knowledge-intensive industries to air navigation, radio, telecommunications, avionics, electronics, automation and control.

The Institute's activities carried out in accordance with the recommendations of the International Civil Aviation Organization (ICAO), the European Organization for the Safety of Air Navigation (EUROCONTROL), the European Aviation Safety Agency (EASA), the International Telecommunication Union (ITU), the Institute of Electrical and Electronics Engineers (IEEE) and aimed at implementing the international concept of global communications, navigation, surveillance and air traffic management (CNS/ATM).

In accordance with the requirements of the international training of future aviation professionals IAN involves mastering professional-oriented English language at the Department of Aviation English. All specialties training is carried out on education and qualification levels "Bachelor", "Specialist", "Master".





INSTITUTE OF AIR NAVIGATION

Training Direction and Specialties



1. Transport and Transport Infrastructure

— Direction: Air Navigation.

2. Radio-engineering, Radio-electronic Devices and Communications

— Directions: Radio-engineering; Telecommunications.

3. Aviation and Space-rocket Technics

— Direction: Avionics.

4. Automation and Control

— Direction: System Engineering.

5. Electronics

— Directions: Micro- and Nano-electronics; Electronic Devices and Systems.

Courses and disciplines of the Institute of Air Navigation, that are close to the project theme

- Radio electronic devices, systems and complexes;
- Complexes of navigation equipment;
- Systems for Air Navigation Services;
- Computerized control and automation systems.





INSTITUTE OF AIR NAVIGATION

DEPARTMENT OF AIR NAVIGATION SYSTEMS

Department of Air Navigation Systems is a graduate of the field of knowledge «**Transport and Transport Infrastructure**» on the Direction “Air Navigation” and provides professional training of specialists for air traffic control, engineering and research activities in the field of development, design, research and operation of air navigation systems.

The main directions of scientific researches of the Department ANS:

- Satellite Navigation Systems;
- Automatic Air Traffic Control Systems;
- positioning in a Mobile Communication System;
- Avionics Systems;
- Satellite Communication Systems;
- Aviation Meteorology;
- Remote Sensing;
- Aviation Simulator Complexes;
- Traffic Monitoring System.





COMMUNICATIONS OF NAU TRUST DEPARTMENTS WITH INTERESTED ORGANIZATIONS



- State Aviation Service of Ukraine
- State Air Traffic Service Enterprise “Ukraeroruh”
- State Enterprise “State International airport “Borispol””
- Ministry of Infrastructure of Ukraine
- Ministry of Industrial Policy of Ukraine
- Security Service of Ukraine
- State Service of Special Communication and Information Protection of Ukraine
- National Academy of Sciences of Ukraine
- State Space Agency of Ukraine
- State Enterprise “Antonov”
- Central Research Institute of Navigation and Control
- State Flight Academy of Ukraine
- European Organization for the Safety of Air Navigation, etc.

Developing links between education and research based on a correct understanding of the meaning of the research work in the context of a market economy, increasing the flexibility of design and implement programs, as well as their focus on the needs of the labor market, increasing the employability of graduates, and as a consequence, increase the role of higher education in the engineering field.



The European Credit Transfer System (ECTS) in the National Aviation University



since 2006.

ECTS relates to the quality and identifies the most academic institutions. ECTS provides transparency and the recognition of education.

ECTS is based on three key elements: information on training programs and the achievements of the student on mutual agreement between educational institutions and the student and the use of credits ECTS listing estimates from disciplines that characterize performed student as auditorium and separate training.

These key elements of the Activate by using the three basic documents: information package agreement (contract) student and the institution of higher education and inventory estimates from disciplines (ratings on a scale of the estimates on **the National scale** and **the ECTS scale**).

An information package contains information about the University, its training structural subsections (Institutions, Faculties, Departments), the Organization and structure of the educational process in General and individual subjects and other useful information.

Agreement (contract) on Education stipulates that all questions concerning curricula, term and order training, rights and duties of the student and the institution of higher education, etc.





INSTITUTE OF ADVANCED TECHNOLOGIES (IAT)



IAT provides training for undergraduate and graduate students in certain areas of educational activities NAU, leads training and skills development of relevant areas, carries out research, design and engineering and other types of work, conducting additional training for students and postgraduates extra volume established curricula NAU basic training program.

Provides training for undergraduate and graduate students in certain areas of educational activities NAU **in English**, facilitates the introduction of modern information technologies in the educational process.

Admission procedure:

- Admission procedure selects students according to their own desires and the interview with the supervisor of the project and on condition of their successful performance on the major educational program;
- Supervisors and students are approved by the Scientific-Methodical Council of the Institute relying on the resolution of the teaching staff of the department, according to the decision of the Academic Council of Scientific and educational institutions in key areas of education;
- Students of the institute of Advanced Technologies are involved in solving actual scientific tasks under the guidance of leading scientists of Ukraine - academicians, corresponding members and professors from a number of prominent scientists of NAU and the National Academy of Sciences of Ukraine;
- Students of 3-5 years of study at NAU Institutes who are trained as "good" and "excellent" in their major educational programs are invited to study at the institute of Advanced Technologies

Educational process at IAT is complete cycle for training highly qualified personnel with enhanced **fundamental** component for high-tech industries of Sciences.

Training is carried out according to the scheme: **Student - Bachelor - Master - PhD NAU.**





POSTGRADUATE STUDIES in the National Aviation University



was founded in 1951.

Postgraduate training is over on
59 specialties, of which
33 - engineering profile.

NAU postgraduate students and employees were defended PhD theses:
in 2009 — 97, 2010 — 64, 2011 — 78, 2012 — 58, 2013 — 81.

Now, in the University there are more than 500 postgraduate students

On the departments of the University is constantly being revised list of scientific specialties, on that is carrying out training of highly qualified personnel, it is planning to open new scientific specialties.

There are 14 Specialized Academic Councils on thesis approval.





SCIENTIFIC SPECIALTIES in engineering



- 01.04.04 - Physical Electronics
- 01.05.03 - Mathematical and Software of Computers and Systems
- 01.05.04 - System Analysis and Theory for Optimal Solutions
- 05.01.01 - Applied Geometry; Engineering Graphics
- 05.01.02 - Standardization, Certification and Metrological Assurance
- 05.01.03 - Technical Aesthetics
- 05.02.02 - Machines Engineering
- 05.02.04 - Friction and Deterioration in Machines
- 05.02.09 - Dynamics and Strength of Machines
- 05.02.10 - Diagnostics of Materials and Structures
- 05.05.03 - Engines and Power Plants
- 05.07.01 - Aerodynamics and Gas Dynamics of Aerial Vehicles
- 05.07.02 - Design, Manufacture and Testing of Aerial Vehicles
- 05.07.12 - Remote Aerospace Investigations
- 05.07.14 - Aerospace Simulators
- 05.09.03 - Electro Technical Complexes and Systems
- 05.11.13 - Devices and Methods of Control and Determining the Substances Composition
- 05.12.02 - Telecommunication Systems and Networks
- 05.12.17 - Radio Engineering and Television Systems
- 05.13.03 - Control Systems and Processes
- 05.13.05 - Computer Systems and Components
- 05.13.06 - Information Technology
- 05.13.07 - Automation of control processes
- 05.13.12 - Automation System of design work
- 05.13.21 - Data Protection Systems
- 05.13.22 - Project and Program Management
- 05.22.01 - Transport Systems
- 05.22.13 - Navigation and Motion Traffic Control
- 05.22.20 - Operation and Maintenance of Transport Means
- 05.23.01 - Construction, Buildings and Structures
- 05.23.17 - Structural Mechanics
- 05.23.20 - Urban and Territorial Planning
- 21.05.01 - State Information Security





POSTGRADUATE TRAINING SYSTEM



Regulatory Framework

- Cabinet of Ministers of Ukraine Decree "On approval of the awarding of academic degrees and conferring academic titles"
- Cabinet of Ministers of Ukraine Regulation on the preparation of scientific teaching and research staff.
- Regulation on the preparation of scientific teaching and research staff through postgraduate and doctoral studies of NAU.
- Order of NAU on certification postgraduate and doctoral students.

Approve the dissertation topic and the supervisor (Department - Faculty / Institute - University Academic Council)

- Within the framework of the relevant scientific school;
- In accordance with the direction of research and specialty passport approved by Ministry of Education and Science of Ukraine

Entrance Exams (University Admissions Committee)

Philosophy, Foreign Language, Specialty

Candidate Exams (University Specialized Committee)

Philosophy, Foreign Language, Specialty (the advanced courses)

Candidate Exam **on a specialty** according to the program:

Standard Program on a specialty (Ministry of Education and Science of Ukraine),

Additional Program in the direction of researches (Department - Faculty / Institute),

Summary on the dissertation matters (Applicant).

Postgraduate study:

Individual work plan.

Report - every six months (at the Department and approved by the Institute).

Requirements for dissertations:

- scientific qualification work (solution of scientific problems, high theoretical knowledge and practical experience);
- accordance to the specialty and the topic (fundamental and applied);
- relevance, scientific novelty, practical value, the reliability of results, etc.;
- publication (min. 5 articles in specialized publications, 1 article in scientometric database);
- approbation and implementation;
- formalization of the thesis manuscript and dissertation abstract.

Preliminary thesis presentation (Department - Faculty / Institute - University Academic Council)

Public thesis presentation (Specialized Academic Council)

Approve the decision about a scientific degree awarding (Ministry of Education and Science)





In 2008, a cooperation agreement № 98-2008/UA-LI was signed between **NAU** and **Vilnius Gediminas Technical University** due to the opening of an **International Joint Doctoral Studies** with:

- Vilnius Gediminas Technical University (Lithuania),
- Klaipeda University (Lithuania),
- Aleksandras Stulginskis University (former Lithuanian University of Agriculture) (Lithuania), ,
- Riga Technical University (Latvia),
- Warsaw University of Technology "Warsaw Polytechnic" (Poland),
- National Aviation University (Ukraine).





DOCTORAL CANDIDACY INSTITUTION in the National Aviation University (the degree of Doctor of Science– - second stage of Scientific Personnel Training).



21 specialties.

Serious attention to the scientific-pedagogical staff of higher qualification training through doctoral institution is paid at the University. As the availability of high scientific potential at the faculty influences greatly the level of specialists training, who are the future of an independent, powerful state, a country where great emphasis on the development of science is made.

In 2011 and 2012 Doctoral Candidates and the University staff maintained 10 Doctoral theses, in 2013 – 16 Doctoral theses. In 2014 are planned to be maintained 20.

Today, the University trains 28 Doctoral Candidate.





The development of the University science is the logical continuation of significant achievements of earlier generations of scientists.

Social and economic environment of the new century, the development of the world science, the University`s restructuring, the opening of new specialists training fields, on one hand, and involvement of highly qualified scientists of relevant scientific activity directions, on the other hand have led to significant restructuring of the University science, its subjects broadening, appearance of research complex on engineering issues, and, as a consequence, to reform the system of highly qualified specialists training in the field of engineering education

through the development and implementation of an experimental model of the doctoral program (PhD) in engineering and aerospace technology due to Bologna Process.





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