



National Technical University Kharkiv Polytechnic Institute

Faculty of Engineering Physics



DYNAMICS AND STRENGTH OF MACHINES DEPARTMENT



*specialty on Computer Science and Information
Technology (Bachelor)*

*with specialization in Informational Technology
in Engineering Design (Master)*



Areas of studying:

A strong mathematical background and knowledge of theoretical, methodological and algorithmic base of IT that uses for solving the practical and scientific problems.

A knowledge of modern methods of construction and analysis of efficient algorithms and the ability to implement them in practical applications.

Understanding of the main approaches, methods and techniques of artificial intelligence, an ability to develop and apply models of knowledge and data processing.

Ability to use the programming languages, the tools of description of information resources, their specifications, and the ability to design and develop the information systems, IT products and IT services.



Areas of studying:

Qualification to perform a computer modeling of engineering objects and computational simulations of physical processes with the modern CAD/CAE tools using techniques of object-oriented parameterization and algorithms of computer graphics.

Ability to use the tools of the organization of the clustered computer systems.

Employment perspectives:

- IT companies
- ICT departments in Engineering Companies
- Engineering Consulting Firms
- Departments of CAD/CAE (computer- aided design/engineering)
- Technical Universities and Research Centers

Academic staff in the department:



The Department of Dynamics and Strength of Machines is headed by Professor, Doctor of Engineering Science
Gennadiy Lvov

Education process in the department is carried out by:

2 – Doctors of Engineering Science

9 – Candidate of Engineering Science, PhD

You can find a details on our website:

<http://web.kpi.kharkov.ua/dpm/en/lecturers/>

General academic disciplines for the students of our department (bachelor's level)

Strong applied mathematic education

Programming

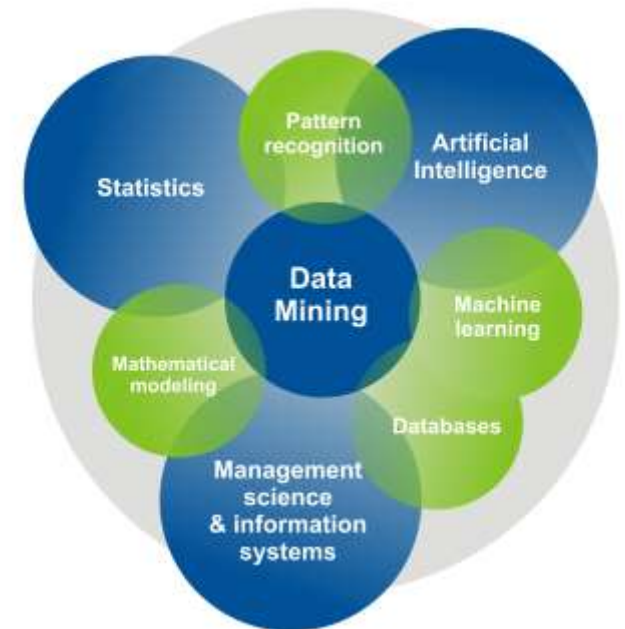
Theory of algorithms and data structuring

Technology of programming

DATA BASE and DATA Mining

Cross-platform programming

WEB development and computer networks



General academic disciplines for the students of our department (bachelor's level)

Technical mechanics

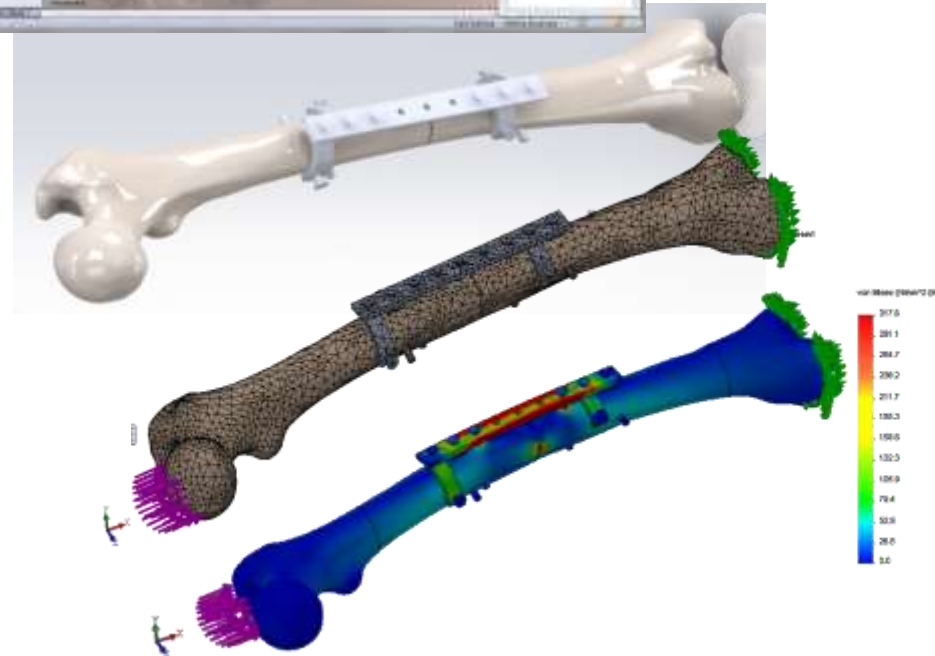
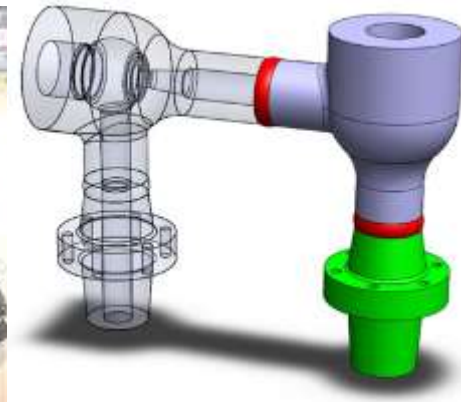
Basis of continuum mechanics for engineers and designers

CAD software for Engineers

Basis of Finite Elements Method (with practice in CAE software)

Theory of dynamic systems and computer tools for their simulation

Mobile application development



General academic disciplines for the students of our department (master's level)

Computer graphics

Artificial intelligent

Advanced Engineering Simulations
(with CAE practice)

CAD/CAE integration tools development

Theory of optimisation

Signal processing theory and computational
applications for engineering problems

Algorithms for parallel computations and
design of cluster computer systems



International collaboration of our department

The Department has wide international contacts:

Otto von Guericke University Magdeburg (Germany);

RWTH Aachen University (Germany);

Universität Stuttgart (Germany);

Riga Technical University (Latvia);

University of Strathclyde (Glasgow, UK);

The faculty has also contacts with:

Università degli Studi di Modena e Reggio Emilia (Italy);

McGill University (Canada);

International activity of the Dynamics and strength department:

Research projects funded by EU

(INNOPIPES (2013-2016) – The technology of non-destructive repair of main gas pipelines made of composite materials. During the project 8 members of academic staff of our department had a 3 month research practice in EU Universities. Details are [here](#).)

DAAD Grants and Scholarship

(since 2001 57 students have got an Euler scholarship and complete the traineeship during the diploma practice at Universities of Germany).

Alumni



Ali Movaghghar

PhD student

of Dynamics and Strength of Machines

Department of NTU KhPI, 2009-2012

PhD in Mechanical Engineering, 2012



Saeed Daryazadeh

Master student, PhD student

of Dynamics and Strength of Machines

Department of NTU KhPI, 2008-2016

PhD in Mechanical Engineering, 2016