

# Applied Mechanics

Kazan (Volga Region) Federal University

Language of study: **Russian**

Mode of study: **full-time**

Duration: **4 years**

Availability of free education: **yes**

Price: **160 800 RUB per year**

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“Dynamics and strength of machines, devices and equipment”

**The purpose** of curriculum is to give confident substantive knowledge in mathematics and solid mechanics, as well as skills of using IT in modern engineering.

**Educational process** could be split in two main stages:

First stage gives mathematical base to student. There is fundamental knowledge allows understanding the concept of classical mathematics, which is necessary in describing of mechanical processes. Basic physics and computer programming are studied on this stage in addition. After completion of this stage student can understand the language of various natural and hard science.

Second stage is oriented on functional engineering courses, for example: problems of computer-aided design, topological optimization, questions of related and complex design, engineering mechanics, machinery and product component analysis, simulation, evolutionary prototyping, etc. Students get skills of programming and working in specialized software packages: C++, SolidWorks, Matlab, , Компас, Ansys, Siemens NX, Wolfram Mathematica. Research work started on second stage too. Researching unleashes the potency and creativity of the students and enable to apply knowledge and skills for own projects. The most successful students can find personal fulfillment, get first patents and scientific publications.

## Graduate's professional competencies

- to find innovation solutions for challenges of manufacturing;
- to compete in the international labor market;
- to develop and to apply specialized software packages in engineering;
- to combine substantive knowledge with modern technical solutions;
- to apply mathematical methods and algorithms of computational mathematics;
- to use mathematical methods of automatic information processes;
- to research and patent search , scientific and fabrication documentation.

## Field of professional activities

The most stereotypical, but not the only ones vacancies for which our graduate can be considered are mechanical engineer, design engineer, stressman engineer, and technologist. The opportunity to automate workflow and to apply learned skills in the broad areas (aircraft, machinery, tool design, etc.) set apart our graduate from other. Basic training helps them to specialize on their own at requisite fields at the earliest time possible. Discipline allows applying for a management position.

Institute of Mathematics and Mechanics enables to improve professional qualification at master's degree program and postgraduate studies.

### **Specializations within this programme**