Bauman Moscow State Technical University (Kaluga branch)

"The Software Engineering" (ITD)

The direction of training bachelors/masters 09.03.04/09.04.04

The department IU4-KB of «Computer software, information technologies»

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What is «The Software Engineering»

Software Engineering is the integration of the principles of computer science and computer engineering with engineering approaches. Simply put, this is **a systematic and scientifically based approach to the development and support** of large software projects.

Software engineering is a relatively new branch of knowledge, which has become widespread due to **the increasing complexity and volume of software products**, the transition to the corporate culture of its production. Among other areas, it qualitatively differs from the non-material software and the discrete nature of its functioning. Based on information technology and mathematics, **the software engineering develops** adequate models and reliable methods of producing high-quality information systems, and this approach extends to all levels: from theory and general development principles to real practice of creating software for various platforms, environments and programming languages.

How to enter the ITD

For admission, applicants must submit documents in a timely manner, indicating the scores of the Unified State Examination (USE-EGE) on **INFORMATICS, PROFILE MATHEMATICS and RUSSIAN LANGUAGE**. It is possible to enter according to the target set. The Kaluga Branch of the Moscow State Technical University invites interested persons to improve the level of knowledge in Informatics to pass the USE-EGE much better. Such courses are organized in the KB of MSTU for pupils, who study in 10th and 11th grades. You can get more information, if you call the number: (4842) 56-26-31.

If you want to get more information, you should contact the **Admissions Board**: audience 102, Bazhenov street, 2, Kaluga the call number: (4842) 57-90-14.

In according to the current rules of admission, the applicant indicates in the application several areas of training or specialties (in order of preference), forming a competition for them. A passing grade for entrance was 203 in 2019, 173 - in 2018, 224 - in 2017, 183 - in 2016, 172 - in 2015, 216 - in 2014, 219 - in 2013. 1 person was enrolled according to the targeted recruitment in 2019. In total, 27 students study according to the targeted recruitment.

The organization of training on ITD

The training can be **completely free** also in the magistracy, and in postgraduate study for students enrolled on a budgetary basis. Each year **the number of budget places** is about **48**. During the training, students have the opportunity to study not only the basic subjects proposed by the curriculum, but also to choose one of the proposed subjects (disciplines of choice).

The educational process is divided into 2 stages: a) after 4 years of studding students are awarded a **«Bachelor's degree»**
б) after 4 years of studding students are awarded a **«Master`s degree»**

At the department there is **a post-graduate course** with full-time and part-time forms of study (the term of study is 4 years and 5 years, respectively), therefore our students who want to continue their education after graduation can professionally engage in scientific work, combining it with work on the profile.

What is being studied at the ITD

Our main task is to train qualified specialists in software development, project management, processes, and personnel who are fluent in methods and tools of software engineering. This is a very extensive field of knowledge, including many adjacent sections of **Mathematics, Technology, Informatics**. Therefore, the entire educational bachelor`s program can be conditionally divided into 3 blocks of disciplines: **humanitarian, mathematical and professional**.

Among the professional disciplines we can mark the following:

- The foundations of programming engineering
- Object-oriented programming
- Databases
- Operating systems
- Computer networks
- Computer architecture
- Computer graphics
- Big data technologies
- Machine Learning Methods
- Data Analysis Technologies
- Software design
- Testing and debugging software
- Analysis of algorithms
- Logic and theory of algorithms
- Economics of software engineering
- Perspective programming languages
- Mobile software development
- etc.

Employment during training and after training

We fully support the desire of our students **as soon as possible to join the work** on the profile of training. So, on the 4th year of the course, about half of the students work on the profile. All this is due to the applied character of the studied disciplines at the ITD: the competences and knowledge obtained here, which are harmoniously complemented by experience in specialized companies.

Graduates and students of ITD work in companies engaged in the design, development, testing and software support, in departments of state and private enterprises ASU, in information processing and analysis centers, in information and analytical departments of organizations, telecommunications companies, etc.

Among the large industrial, financial and scientific and technical companies in which our students and graduates **work successfully**, we can mention such as the Administration of the Governor and the Government of the Kaluga Region, «Megafon», «Rostelecom», «Volkswagen», «Gazenergobank», «Gazprom», «Tayfun», «KNIITMU», «Kaluga-Astral», «Algont», «Sigma», «Samsung Electronics», «DevExpress», «ArgusSoft», «Cisco», «Microsoft», «Yandex», «Google» and etc.