

Methods of analytical chemistry

Kazan (Volga Region) Federal University

Degree or qualification is awarded: **Master**

Language of study: **Russian**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **no**

Price: **180 840 rubles per year**

Programme webpage at the university website:

<https://kpfu.ru/eng/academic-units/natural-sciences/alexander-butlerov-institute-of-chemistry>

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The purpose of the educational program

Development of professional skills and competencies sufficient for successful work in industry, scientific and educational institutions in the area of analytical chemistry

Why is it worth choosing this program?

Due to complex approach to education and significant part of practices, laboratory and practical studies governed by leading specialists in curriculum, the master students will receive comprehensive conceptions on modern methods of analytical chemistry that offer for them further carrier in special laboratories of industrial enterprises and higher education institutions .

Master course is based on the platform of electroanalytical chemistry as a background of the development of professional skills and meanwhile gives necessary professional skills in other areas of analytical chemistry highly demanded by employers, e.g., atomic spectroscopy and chromatography. Master students successfully finishing the programs can enter the PhD course on 02.00.02 - analytical chemistry

Description of the educational process

At the first year of education, Master students study the following courses: academic writing, philosophical problems of chemistry, computer technologies in science and education, modern theory of chemical bonds. Variable part of the curriculum involves crystallochemistry, selected chapters of analytical chemistry, methods of environmental monitoring, flow methods of analysis, voltammetry in biology and medicine. Elective courses involve supramolecular chemistry, nanomaterials in analytical chemistry, modern trends on atomic absorption spectrometry, integrated analytical systems, mass spectrometry of organic compounds, as well as various aspects of application of organic reagents and regional problems of ecology and subsoil use. In the second year of the Mater program, selected chapters of chromatography, test analysis methods, biosensors and the problems related to forensic and pharmaceuticals analysis are studied.

Skills that students will acquire after completing an educational program

Master students are prepare to participate in the studies of chemical processes observed in natural and laboratory conditions, to the development of novel and perfecting existing methods of the analysis of

various subjects; to the search of the relationships of the analysis and interpreting data obtained. In the framework of their competencies, they will be able to collect and consider literature, plan experiments, analyze the results obtained and prepare recommendations for their use in real economy. They will be able also to conduct research and teaching in the specialized secondary education institutions.

Professional Areas Where Graduates Have Advantages

Government laboratories authorized in the analysis of foodstuffs, environment and industrial materials and raw matters are the employers of the Master students graduated from this program. Besides, the Master students are demanded in industrial laboratories in machinery constructions, chemical industry, in production and processing of agriculture matter. They can work in Academy of sciences institutions and leading research centers involved in the investigation relate to analytical chemistry.

Specializations within this programme