

# Applied Computing in Engineering and Science

Siberian Federal University

Degree or qualification is awarded: **MSc Applied Mathematics and Computer Science**

Language of study: **English**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **no**

Price: **190 000 RUB per year**

Programme webpage at the university website: <http://www.sfu-kras.ru/en/masters/applied-computing#tab1>

Programme curator: **Alexey Kytmanov**

Tel.: **+7-3912-91-21-94**

E-mail: [aakytmanov@sfu-kras.ru](mailto:aakytmanov@sfu-kras.ru)

Siberian Federal University (School of Space and Information Technologies) offers *English-taught Master's Degree Program "Applied Computing in Engineering and Science"*.

**Entry requirements:** 1) BSc or MSc degree in Mathematics, Physics or Computer Science (transcript of records), 2) good command of English (certificate or other document)

The curriculum combines different areas of mathematics, statistics and information technologies into a modern interdisciplinary study program focused on applied computing. The aim is to educate highly qualified and skilled graduates, who:

- will be able to understand the theoretical background and the scientific foundations;
- will be familiar with the tools to apply the theoretical framework in practice;
- will have experience with practical applications and interpretations of the outcome.

## **Program content and structure:**

The curriculum contains the following thematically connected main topics, which cover the most important issues for solving mathematically and computationally oriented problems in practice:

- Scientific computing (14 ECTS): computer algebra, computer aided differential geometry, functional analysis, etc.
- Numerical Analysis and Optimization (5 ECTS): numerical simulation techniques, efficient coding methods, discretization techniques, etc.
- Mathematical Modeling (11 ECTS): model building and simulation, partial differential equations and dynamical systems, etc.
- Statistical Modeling and Computing (10 ECTS):

- descriptive statistics, multivariate statistics, advanced regression and classification, clustering and pattern recognition, etc.
- software environment, large memory data analysis, data visualization techniques, high-dimensional data analysis, etc.

The program curriculum and research projects are based on more than 20 years experience of cooperation with the leading producer of Russian GLONASS navigation satellites — Reshetnev center situated near Krasnoyarsk. Many of our courses are aimed at application of navigation signal processing. Our local supercomputing cluster provides the necessary research and training facilities.

### **Specializations within this programme**