

GNSS positioning algorithms and applications

Samara National Research University

Degree or qualification is awarded: **Master's Diploma**

Language of study: **English**

Mode of study: **full-time**

Duration: **2 years**

Availability of free education: **yes**

Price: **147 400 RUB per year**

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Samara University offers this master program for students, who want to become experts in GNSS area. Global Navigation Satellite Systems (GNSS) penetrates into many important elements of contemporary human's life. Being an expert in GNSS means, that you are on the edge of state-of-art technologies of electronics and computer science.

Program description

This program is implemented within the framework of applied mathematics and physics. The program allows to educate highly qualified professionals, capable to develop efficient algorithms and software for GNSS, to adapt standard solutions for specific purposes, to apply advanced mathematical methods for making positioning more precise and reliable. Using new GNSS, like Beidou and Galileo with existing GPS and Glonass open amazing opportunities of development new technical systems, making our life better.

Program benefits

Practical competencies: experience with MATLAB simulation of GNSS signals and hardware/software, application of A-GPS and DGPS technology, implementation of specific positioning algorithms.

Professional skills. The graduates will obtain following professional skills:

- Using GNSS-based technologies for positioning and other applications;
- Development of new navigational systems complexing GNSS with other technologies, like inertial navigation;
- Development of the dedicated software for solving positioning tasks;
- Development of models and algorithms used in positioning.

General supervision is performed by the expert in GNSS technologies professor Kai Borre, who has comprehensive experience in GNSS technologies.

The structure of the educational program

The curriculum includes a set of basic courses like fundamentals of GNSS, positioning technique, methods of signal processing, Kalman filtering, MATLAB, geodetic applications of GNSS, algorithms of data processing, as well as specialized courses, and statistical methods.

The curriculum includes courses in mathematical modelling, software development, and dedicated courses in GNSS technology. Many courses are delivered by lecturers, invited from the leading centres, involved in GNSS technologies. An important element of the program is the teaching of core disciplines and working with study materials in the English language.

Future profession

The field of professional activity of graduates includes science, engineering and technologies related to research, design, and manufacturing of the electronic systems used in positioning applications.

Graduating from this program you are prepared for the following professional activities:

- Electronic engineering;
- Software engineering;
- Scientific research.

Specializations within this programme