

GNSS receivers. Hardware and software (international)

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: **157 400 RUB per year**

Programme webpage at the university website:

<https://ssau.ru/english/education/programs/387/03f43dac-3f19-11e9-bbc6-005056a7430c#program-desc>

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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 radio engineering. The program allows to educate highly qualified professionals, capable to develop hardware and software of GNSS receivers, to adapt standard solutions for specific purposes, to apply new technologies and elements in GNSS. Development of state-of-art elements, like FPGAs and DSPs provides an opportunity to create GNSS receivers with completely new features.

Program benefits

Practical competencies: experience with Matlab simulation of GNSS signals and hardware/software, using FPGA and DSPs for the development of GNSS receivers, efficient implementation of SDR technique, implementation of specific positioning algorithms.

Professional skills. The graduates will obtain following professional skills:

- Development of state-of-art GNSS receivers;
- Using GNSS technologies for positioning tasks and other applications;
- Development of dedicated software for solving positioning tasks;
- Development of hardware for various applications;
- Development of complex GNSS.

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, mathematical methods of signal processing, state-of-art circuitry engineering, as well as specialized courses like implementation of radio receivers, SDR technology, antennas, DSP processors and algorithms, techniques for acquisition and tracking of GNSS signals, micro- and nanoelectronics, and MATLAB.

The curriculum includes courses in electronic applications, software development, dedicated courses in GNSS technology. Many courses are delivered by lecturers, invited from the leading centres, well-known in the world of 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