### Program name

Master's degree program 09.04.01.12 “Digital Intelligent Control Systems”

### Key facts

The Master's Program "Digital Intelligent Control Systems" is offered by the School of Space and Information Technologies of the Siberian Federal University. The expansion of the scope of intelligent digital control systems is one of the main trends in computer technology. Subject matter experts are in demand in the labor market, but their training requires complex equipment, as well as the professional and practical experience of the teaching staff. All these conditions are available to the participants of this Master Program. Formed skills cover the full cycle of intelligent control system development. The Program provides training in developing embedded intelligent control systems based on modern microprocessors, microcontrollers and programmable integrated circuits (FPGA, PLD, SoC). During the training, students receive skills that allow graduates to perform the full cycle of developing intelligent embedded control systems at a high professional level. Core disciplines of the Program have been developed or updated with the participation of leading European universities within the framework of the international project “Applied curricula in space exploration and intelligent robotic systems (APPLE) (2016-2020)”.

### Program length

2 years

### Starting date

September, 1st

### Language of instruction

English

### Prerequisites

- Bachelor's degree in BSc degree in Computer Science (a copy of your diplomas from previous university studies and transcripts of completed courses and grades)
- good command of English (certificate or other official document, English level B1 (European Framework of Reference of Communicative Skills)
- written examination;
- a motivation letter and letters of recommendation may also be required.

### Tuition fee per year

250,000 rubles (~ 3,310 USD)

### Program leader/team

Oleg V. Nepomnyashciy
Ph.D. in Engineering, Professor, Head of Computer Science department, ISIT SibFU.

### Qualification

Master of Science

### Skills/objectives

- design, verify, and test software/hardware intelligent control systems using system-design platform LabView (© National Instruments);
- develop embedded intelligent control systems for executive automation based on microprocessors and microcontrollers;
- develop software for embedded systems in C and assembler;
- build effective FPGA/PLD designs using Hardware Description Language Verilog (or VHDL) and professional CAD Quartus (© Intel);
- implement circuit solutions for the interfacing of intelligent digital systems with sensor systems and executive automation.

### Curriculum

- Electronical Engineering
- Measurement and Testing
- Sensors and Visual Systems
- Microcontrollers and Systems-on-Chip
- Language skills
C Programming for Embedded Software
Digital System Design
Digital Signal Processing
Professional Communication
Intelligent Systems and Neural Networks
Internet of Things
Research Project Management
Wireless and Sensor Networks
Optimization of Computer Networks
Embedded Operating Systems
Real-time Operating Systems

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<th>Contacts</th>
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