

Computer Science and Computer Engineering

South Ural State University

Degree or qualification is awarded: **Lecturer, researcher**

Language of study: **Russian**

Mode of study: **full-time**

Duration: **3 years**

Availability of free education: **yes**

Price: **169 500 RUB.**

Programme webpage at the university website:

<https://www.susu.ru/en/education/phd-degree-programs/030601-physics-and-astronomy-condensed-matter-physics>

Programme curator:

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The graduates can do researches in the following areas:

- Development of the parallel database management system (DBMS) for multiprocessor computer systems with cluster architecture
- The introduction fragment of parallelism in a DBMS open source
- The development of distributed virtual test benches
- Intelligent analysis of huge graphs using a parallel relational DBMS

Specializations within this programme

System analysis, management and processing of information

03.06.01 Physics and Astronomy (Condensed Matter Physics)

Computer-aided Materials Science: modelling the structure and properties of materials at the quantum-mechanical, atomic, and continuum levels.

Numerical Theory of Physical Experiments for studying the properties of fluids: development of the methods of processing the results of full-scale experiments in order to improve the reliability of determining the physical and chemical properties of fluids by means of comparing the parameters of full-scale and numerical experiments.

Quantum Informatics: theoretical building and testing the reliability of the schemes of performing quantum computing.

Objects of professional activity: physical systems of various scales and levels of organization, processes of their functioning; physical, engineering-and-physical, biophysical, physical-and-chemical, physical-and-medical and environment-protection technologies; physical expert review and monitoring.

Types of professional activity: research activity in the fields of physics and astronomy; teaching activity in the fields of physics and astronomy.

Tasks of professional activity: conducting research within the projects being fulfilled; and developing the scientific and methodological support for the fulfilment of the supervised subjects of study, courses, and disciplines (modules).

Field of future profession

Mathematical and software of computers, complexes and computer networks

