Don State Technical University HIGHER EDUCATION SYLLABUS IN	
1.1Name of the study programme (in the original language)	Приборы и методы измерения
1.2.Name of the study programme in English	Instruments and methods of measurement
1.3.Qualification (degree)	Researcher, lecturer and researcher
1.4.Mode of education	full-time study, part-time study
1.5.Educational department	Faculty "Instrument-Making and Technical Regulation", department "Instrument-Making"
1.6.Workload (ECTS)	240
1.7.Duration of education	4 years (full-time study) 5 years (part-time study)
1.8.Field	Photonics, instrumentation, optical and biotechnical systems and technologies
1.9.Profile	Instruments and methods of measurement
1.10.Code of the field	12.06.01
1.11.Teaching languages	Russian
1.12.Other necessary languages	
1.13.Approved by the educational department (date)	
1.14.Admission requirements	Diploma of higher education (specialist's or master's degree), entrance examinations (foreign language, philosophy, special discipline)
2.Aim of the programme	
The aim of the professional educational program is to prepare graduate students in the field of laser physics, wave optics, integrated and fiber optics, nonlinear optics, optoelectronics, plasmonics, Biomedicine, Biotechnics, development of optical communication systems, registration and information processing, development, modernization and creation of devices and systems based on various photonic principles, the creation of new materials (metamaterials) for Photonics, optical, optoelectronic, biotechnical and biomedical applications.	
3.Characteristics of the programme	
3.1.Main disciplines/modules	Instruments and measurement methods Teaching practice Research project State Final Examination Foreign language History and philosophy of science Psychology and pedagogy of the higher school
3.2 Elective disciplines	design and implementation of educational program on basis of Federal Educational Standard management and marketing in sciences society
4.Employment and further education opportunities	
4.1 Job opportunities	research activities in this area; Teaching activities for higher education

programs

5. Programme learning outcomes

A graduate who has mastered the program of postgraduate study must have the following competencies:

- ability to critically analyze and evaluate modern scientific achievements, generate new ideas in solving research and practical problems, including in interdisciplinary areas;
- ability to design and implement complex research, including interdisciplinary, based on a holistic system of scientific worldview using knowledge in the field of history and philosophy of science;
- willingness to participate in the work of Russian and international research teams to solve scientific and educational problems;
- willingness to use modern methods and technologies of scientific communication in the state and foreign languages;
- ability to follow ethical standards in professional activity;
- ability to plan and solve problems of own professional and personal development;
- the ability to identify new research areas, new problems in the field of professional activity using the data analysis of the world information resources, to formulate goals and objectives of scientific research;
- ability to offer solutions, choose methods and means of scientific research;
- knowledge of the methodology of development of mathematical and physical models of the processes, phenomena and objects related to the professional sphere;
- ability to plan and conduct experiments, process and analyze their results;
- ability to assess the scientific significance and prospects of the applied use of the research results;
- ability to prepare scientific and technical reports and publications on the results of the research;
- readiness for teaching in the main educational programs of higher education;
- readiness to research, design, manufacture and use of devices and systems designed to obtain, record and process information about the environment, technical and biological objects;
- the ability to develop metrological support and regulatory and technical solutions to improve the efficiency of production of products, the quality of which depends on the accuracy and reproducibility of measurements.

6.Education style (Teaching, learning, assessment)

6.1.Learning and teaching approaches: teamwork, methods of problem training, learning from experience, ahead of independent work, design method.

6.2. Assessment methods: case method, multimedia presentations, reports, abstracts, creative assignments.

7.Contact information (responsible chair, head of the programme)

Department of "Instrument-making", the head of the program - candidate of technical sciences, associate professor Irina Konstantinovna Tsybri, tel. (863) 2738-369