

Master Degree Programme: Physics (70530901)

Programme Educational Objectives

The Master Degree Programme in Physics aims to deepen theoretical and applied knowledge in physics and to prepare highly qualified specialists capable of conducting scientific research, solving advanced scientific and technological problems, and contributing to innovation in science, education and industry. The objectives of the educational programme are:

- preparing graduates for independent scientific and research activities in the fields of fundamental and applied physics, including theoretical, experimental and computational approaches;
- providing advanced knowledge and practical skills in optics, laser physics, theoretical physics and related modern areas of physics;
- satisfying the needs of research institutions, higher education institutions, high-technology industries and innovation sectors for highly qualified specialists with advanced training in physics;
- creating conditions for developing students' abilities for independent scientific thinking, critical analysis, research methodology and lifelong learning;
- preparing graduates for professional activities in scientific institutions, universities, research laboratories, industrial enterprises and organizations using modern physical technologies;
- developing professional and personal competencies that ensure competitiveness in the labour market, leadership abilities, ethical responsibility, communication skills and the ability to work effectively in multidisciplinary and international environments.

Intended Learning Outcomes (Programme Learning Outcomes)

Upon successful completion of the Master Degree Programme in Physics, graduates will be able to:

LO1: Conduct independent scientific research in the field of fundamental and applied physics, formulate hypotheses, analyze experimental and numerical data, present the results in the form of scientific publications and reports.

LO2: Apply modern theoretical models and numerical methods to describe physical phenomena, including quantum mechanics, laser physics, condensed matter physics, and statistical physics.

LO3: Develop and use experimental setups and techniques, including laser, optoelectronic and spectral methods, to study the physical properties of substances and materials.

LO4: Teach physics and related disciplines in educational institutions of various levels using modern pedagogical technologies, including digital and distance learning.

LO5: Work in an interdisciplinary and international environment, participate in applied and research projects, interact effectively in research teams, and develop and manage scientific and technical projects.