VILNIUS UNIVERSITY

To National university of Ukraine
of physical education and sport

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Review of the Educational and Professional Program "Exercise physiology" for Master of Science in Biology and Biochemistry in National university of Ukraine of physical education and sport

The educational and professional program (EPP) "Exercise physiology" offered by the National University of Ukraine on Physical Education and Sport (NUUPES) is a Master's-level program in the field of Biology and Biochemistry, with a specialization in the exercise physiology.

Program strengths are interdisciplinary approach, strong theoretical and practical foundations, research-oriented training, alignment with International Standards

The EPP effectively integrates biological sciences, physiology, and applied research, fostering a comprehensive understanding of human motor activity. The inclusion of disciplines such as molecular biology, genetics, and functional diagnostics strengthens the scientific foundation of the program.

The program's curriculum encompasses core biological sciences, including structural and functional organization of the human motor system, metabolism, and the physiological adaptation mechanisms related to motor activity. The inclusion of both theoretical and applied aspects, such as functional diagnostics and higher nervous activity, provides students with a robust academic foundation.

The emphasis on scientific research through courses like "Modern Trends and Current Issues in Scientific Research in Biology" and "Scientific and Pedagogical Apprenticeship" ensures that students develop essential skills in scientific inquiry, data analysis, and hypothesis testing. The inclusion of a thesis defense as part of the certification process reinforces the research-oriented nature of the program.

The program has been developed in alignment with international standards in exercise physiology and biomedical sciences. The review of comparable programs in leading institutions worldwide ensures that the curriculum remains relevant and competitive in the global academic landscape.

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Expansion of Experimental Techniques and Technological Training greater emphasis on laboratory-based coursework involving state-of-the-art molecular and physiological measurement techniques (e.g., next-generation sequencing, omics technologies, CRISPR-based genome editing) could significantly improve students' practical competencies and research capabilities.

The educational and professional program "Exercise physiology" provides a well-structured, research-oriented curriculum that aligns with international standards in exercise physiology and biomedical sciences. The program's integration of theoretical knowledge with practical applications ensures that graduates are well-prepared for careers in research, academia, and applied physiology. Strengthening the genomic and molecular aspects, expanding experimental training, and fostering international research collaborations would further enhance the program's academic and scientific excellence.

I, as a reviewer, have extensive experience in collaboration with the Department of Medical Biology and Sports Dietetics at the National University of Ukraine on Physical Education and Sport (NUUPES). I have participated in various scientific events together with representatives of this department, co-authored joint publications, and worked on collaborative research projects in sports genetics, including the Athlom and Elite projects. Currently, discussions are underway regarding future scientific projects related to the genetic characteristics of individuals engaged in health-improving physical exercises.

Overall, this program is commendable for its interdisciplinary approach, research emphasis, and alignment with contemporary developments in biological sciences. With the suggested improvements, it has the potential to become a leading program in the field of motor physiology and biomedical research.

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