

IV. Internship				V. Research			VI. Final Certification
Internship Title	Semester	Weeks	Credits	Semester	Weeks	Credits	Master's Thesis
Research	4	8	12	4	12	18	

VIII. Competence Matrix

Competence Code	Competence	Module Code, Discipline Code
UC-1	Use the scientific cognition techniques in research activities, to generate and to realize innovative ideas	1.1, 1.2, 1.3, 2.5, 2.7.1
UC-2	Solve research and innovative problems using advanced information technologies	1.1, 1.2, 1.3, 2.5, 2.7.2
UC-3	Communicate in a foreign language in an academic, scientific, and professional environment for research and innovation activities	2.6.1, 2.7.3
UC-4	Ensure communication, demonstrate leadership skills, be capable of team building and developing strategic goals and objectives	1.1, 1.2, 1.3, 2.1
UC-5	Improve innovation receptivity and innovation skills	1.1, 1.2, 1.3, 2.1
UC-6	Predict the conditions of professional activity and solve professional problems in conditions of uncertainty	1.1, 1.2, 1.3, 2.1
UC-7	Apply psychological and pedagogical methods and information and communication technologies in education and management	2.1
DPC-1	Determine methods, tools, and component bases for unmanned aerial vehicles and satellites development	1.1, 2.2
DPC-2	Apply basic algorithms and methods for flight dynamics controlling small satellites	1.2
DPC-3	Use knowledge about the space environmental effects on different materials, the basic principles of creating advanced materials and coatings for the aerospace systems design	1.3
DPC-4	Develop space missions, hardware and software design for scientific and technological aerospace research	1.4
SC-1	Apply a systematic approach, manage methods and business analysis to project implementation in the aerospace industry	2.1
SC-2	Use computer-aided design and solid modeling tools for unmanned aerial vehicle and spacecraft development	2.2.1
SC-3	Solve applied problems of aerodynamics, apply methods for calculating aerodynamic schemes and performance of aerial vehicles	2.2.2
SC-4	Determine methods and tools for qualification testing of aerial vehicles, satellites, and ground systems	2.2.3
SC-5	Design and test functional elements of aerospace systems based on sensors and MEMS devices	2.2.3
SC-6	Use constructive solutions and knowledge of the flight dynamics' physical foundations in the design of launch vehicles	2.2.4
SC-7	Use knowledge about the propulsion system design principles to control the flight of small satellites	2.2.4
SC-8	Develop architecture, determine the principles of ground-based mission control centers operation	2.3.1
SC-9	Use the theoretical design foundations and methods to achieve the required performance of the operated antennas	2.3.2
SC-10	Develop hardware and software architecture of ground-based optical space surveillance systems	2.3.3
SC-11	Design and operate software-defined radio systems	2.3.4
SC-12	Design laser measuring systems for aerial vehicles, satellites, and ground systems	2.3.5
SC-13	Design laser and ion-plasma control and processing systems	2.3.5
SC-14	Structure and process heterogeneous data arrays of aerospace information systems	2.4.1
SC-15	Use methods for design and managing computer systems, methods of scaling, load distribution and information flows for signal and image processing	2.4.1
SC-16	Apply information security methods for ground and onboard information infrastructure of aerospace systems	2.4.2, 2.4.3

Developed on the basis of the Model Curriculum for the specialty 7-06-0533-09 Aerospace Technologies, approved on 6 March 2023, registration No 7-06-05-021/np.

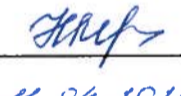
¹ – Depending on the level of Russian language proficiency of foreign citizens, the volume of classroom hours may change (increase/decrease (but not less than 140 classroom hours)/exemption from studying the discipline).

² – General educational disciplines «Philosophy and Methodology of Science», «Foreign Language», «Information Technologies: Basics» are studied at the choice of a master's student. The study of general education disciplines «Philosophy and Methodology of Science», «Foreign Language» ends by the passing of the candidate exam, the general education discipline «Information Technologies: Basics» – the candidate end-of-term test.

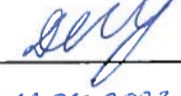
Vice-Rector
for Academic Affairs and Educational Innovations


Alesia G. Prakharenka
11.04.2023

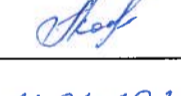
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Natalia I. Marozava
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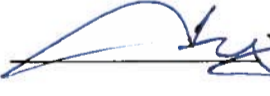
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Recommended for approval by the
Scientific and Methodological Board of
Belarusian State University
Record dated 04 April 2023 No. 6