

Symbol*	Educational outcomes for the study program: after completing the second-degree studies in Physics and Astronomy of general academic profile, a graduate accomplishes the following educational outcomes:
KNOWLEDGE	
Scientific knowledge	
K_W01	Has in-depth knowledge of advanced Mathematics and mathematical methods necessary for solving problems of Physics or Astronomy in the selected areas
K_W02	Knows advanced experimental, observational and numerical techniques, which allow to plan a complex physical or astronomical experiment
K_W03	Knows the rules of functioning of measuring systems and research equipment specific for the area of Physics or Astronomy, or knows advanced methods of theoretical, computational and mathematical Physics or Astronomy
K_W04	Knows the physical processes occurring in stars and galaxies, interstellar and extragalactic medium, has in-depth knowledge of the structure and evolutions of planetary systems, stars, galaxies, and the Universe
K_W05	Knows the processes occurring in atoms, molecules, optical phenomena and condensed matter
K_W06	Has knowledge of contemporary tendencies in the development of Physics and Astronomy
K_W07	Has basic knowledge of economical, legal, ethical and other conditions related to scientific and didactic activity, knows the basic rules of copyrights
SKILLS	
K_U01	Can apply the scientific method to problem-solving, conducting experiments, drawing conclusions and testing hypothesis
K_U02	Has the skill of planning and conducting advanced experiments or observations as well as theoretical considerations in particular fields of Physics or Astronomy and their applications
K_U03	Can conduct a critical analysis of measurements, observations or theoretical computations, along with evaluation of the results' accuracy
K_U04	Can use and modify the available software for numerical modeling of astrophysical objects or physical phenomena
K_U05	Can find relevant information in specialist literature, both from databases and other sources; can recreate the reasoning or the course of an experiment described in literature, taking into account the assumptions made and approximations
K_U06	Has the skill of critical comparison of model data with experimental or observational data
K_U07	Can adapt knowledge and methodology of Physics and Astronomy as well as applied experimental and theoretical methods to the needs of related scientific disciplines
K_U08	Can see the connections between contemporary studies of the Universe and the development of Physics at the fundamental level
K_U09	Can present research findings (experimental, theoretical or numerical) in the written or oral form
K_U10	Can efficiently communicate both with specialists and non-specialists in terms of the topics relevant to the studied field of Physics or Astronomy
K_U11	Can work both independently and as a member of a team, also taking a leading role, is aware of the responsibility for jointly-conducted tasks
K_U12	Can define the directions for further improvement of own skills and knowledge (including self-education) within the selected specialization and beyond it

K_U13	Has language skills in terms of fields of knowledge and disciplines of science relevant to the program studied, in accordance with the requirements set for the B2+ level of the Common European Framework of Reference
SOCIAL COMPETENCES	
K_K01	Knows the limitations of own knowledge and skills
K_K02	Appreciates the meaning of knowledge in solving practical and cognitive problems, understands the need to question experts and authorities
K_K03	Knows and appreciates the importance of intellectual honesty in own and others' actions, is aware of ethical problems in the context of research reliability (plagiarism or duplicate publication, data falsification)
K_K04	Understands the need to popularize the knowledge of Physics and Astronomy, including the latest scientific and technological advances
K_K05	Can formulate opinions related to professional issues, as well as opinions on some topics of public interest, such as the global warming, renewable energy or atomic energy