

Magister fizike/magistrica fizike

Selected qualifications

Name of qualification Magister fizike/magistrica fizike

Translated title (no legal status) Master of Science in physics

Type of qualification Diploma druge stopnje

Category of qualification Izobrazba

Type of education Master's education

Duration 2 years

Credits 120 credits

- A completed first-cycle study programme in any field of physics; or
- a completed first-cycle programme in another field (natural sciences, mathematics, computer science, engineering sciences, economics), if prior to enrolment the candidate has completed the following course units essential for further study, totalling 15 credits: Modern Physics (7 credits), Physical Experiments 4 (4 credits), Complex Systems (4 credits); or
- a completed professional higher education programme adopted before 11 June 2004 in any field of physics; or
- a completed professional higher education programme adopted before 11 June 2004 in another field (natural sciences, mathematics, computer science, engineering sciences, economics), if prior to enrolment the candidate has completed the following course units essential for further study, totalling 15 credits: Modern Physics (7 credits), Physical Experiments 4 (4 credits), Complex Systems (4 credits).

Admission requirements

ISCED field

Field
Naravoslovje, matematika in statistika

ISCED subfield

subfield fizika

Qualification level

SQF 8
EQF 7
Second level

Learning outcomes

Students will be able to:

(general competences)

- think systemically, which enables them to take part in and lead interdisciplinary groups for dealing with complex systems in various fields of the natural sciences, banking, insurance and the addressing of environmental problems,
- analyse complex systems, which is the basis for understanding the functioning of systems in nature, the environment and society,
- give a qualitative and quantitative description of the structure and dynamics of a complex system in order to predict its further development, which enables prediction of the consequences of various impacts on the system and thus the addressing of real problems in nature, the environment and society,
- demonstrate familiarity with the structure and functioning of physical systems and apply knowledge to other fields,
- apply knowledge in practice,
- resolve technical and work-related problems by searching for sources of knowledge and applying scientific methods,

- demonstrate familiarity with experimental and other methods for testing scientific theories,
- show critical judgement, responsibility, initiative and autonomy in decision-making and in managing more complex work,
- demonstrate cooperativeness and work in a group (including in an international environment),

(subject-specific competences)

- demonstrate in-depth knowledge and understanding of physical systems,
- demonstrate familiarity with and understanding of fundamental physical concepts and apply them in the interpretation of natural phenomena and events in the environment,
- demonstrate knowledge of the connections of physical systems with other systems in nature and society,
- demonstrate understanding of and solve more complex physical problems at a qualitative and quantitative level,
- apply the approaches of scientific thinking to the quantitative resolution of problems in nature, the environment and society,
- safely conduct experiments in the field and in the laboratory, assess risk associated with work, demonstrate familiarity with safety regulations and act in accordance with them,
- show and interpret experimental data and their connection with theory, estimate the accuracy of measured quantities,
- develop numerical skills to resolve problems and estimate orders of magnitude and units of results,
- organise and lead project work, group work and lab work,
- integrate macroscopic and microscopic interpretations of phenomena,
- demonstrate knowledge and understanding of the influence of physics on the development of engineering and technology,
- demonstrate understanding of environmental issues and the importance of physics in the prevention and reduction of pollution.

Assessment and completion

Examination performance is scored as follows: 10 (excellent); 9 (very good: above-average knowledge but with some mistakes); 8 (very good: solid results); 7 (good); 6 (adequate: knowledge satisfies minimum criteria); 5-1 (inadequate). In order to pass an examination, a candidate must achieve a grade between adequate (6) and excellent (10).

Progression

In order to progress to the second year, students must have completed first-year course units totalling 45 credits and all lab classes.

Transitions

Third-cycle doctoral study programmes (SQF level 10)

Condition for obtaining certificate

In order to complete the programme, students must complete all course units prescribed by the study programme.

Awarding body

University of Maribor, Faculty of Natural Sciences and Mathematics

URL

<http://fnm.um.si/index.php?lang=en>
