SLOVENSKO
OGRODJE
KVALIFIKACIJ

Doktor znanosti/doktorica znanosti s področja strojništva

Selected qualifications

Name of qualification	Doktor znanosti/doktorica znanosti s področja strojništva
Translated title (no legal status)	Doctor of Philosophy in the field of mechanical engineering
Type of qualification	Doktorat
Category of qualification	Izobrazba
Type of education	Doctoral education
Duration	3 years
Credits	180 credits

Admission requirements

• A completed second-cycle study programme; or
• a completed integrated master's programme consisting of 300 credits; or
• a completed programme leading to an academic higher education qualification, adopted before 11 June 2004, consisting of at least 240 credits; or
• a completed study programme leading to a professional higher education qualification, adopted before 11 June 2004, and a study programme leading to a specialisation, together totalling at least 240 credits; such candidates are required to complete the following course units (totalling 30 credits) from the second-cycle Mechanical Engineering programme before enrolling in the programme: Selected chapters from mathematics (6 credits), Selected chapters from mechanics (6 credits), Modern engineering materials (6 credits), Methods of experimental work (6 credits), Numerical modelling and computer simulations (6 credits) or
• equivalent education in another country.
In the case of limited entry, candidates will be classified on the basis of: average grades in previous studies (20%); bachelor's or master's thesis grade (30%); and a selection examination (50%). Candidates may substitute up to 30% of the selection examination with scholarly or specialist work completed before enrolment in the programme, as demonstrated by relevant publications in scholarly and specialist literature. Criteria for evaluating scholarly and specialist work are laid down by the FS Senate.

ISCED field

Field
Tehnika, proizvodne tehnologije in gradbeništvo

ISCED subfield

subfield metalurgija, strojništvo in kovinarstvo

Qualification level

SQF 10
EQF 8
Third level

Learning outcomes

Qualification holders are qualified to:

(general competences)

- find new sources of knowledge and new solutions in the academic and professional spheres;
- develop new research methods across a broad spectrum of problems and in new or changed circumstances, and take responsibility for leading the most complex work processes and systems;
- develop and illustrate mastery of the latest research methods and procedures from the broader field of mechanical engineering;
- conceive, develop, design, plan and construct new (highest-level) technologies and products using professional critical judgement, self-critical assessment and responsibility, taking into account

professional excellence, social utility, ethical responsibility, a commitment to professional ethics and criteria for the environmental integrity of their creations;
- carry out an independent technical assessment on the basis of scientific analysis and synthesis;
- effectively integrate the latest findings of a new series – and theories that they develop themselves – with professional and applied contents;
- analyse, exclude unimportant effects, produce a synthesis, propose innovative solutions, select the best decision in a given moment and assess related consequences;
- communicate and work as part of a team in national and international contexts;

(subject-specific competences)

- demonstrate mastery of knowledge in a chosen scientific field (e.g. construction and design of engineering systems, computer modelling of engineering systems, computer modelling and experimental modelling of transmission phenomena, power and process engineering, intelligent processing and control systems, advanced concepts in production management, technology of materials, non-linear mechanics) and further develop that knowledge;
- find new sources of knowledge in the academic and professional spheres;
- plan, evaluate and build advanced technologies, innovative products and systems that can potentially be offered in global markets, either now or in the future;
- develop research methods across a broad spectrum of problems and in this way respond rapidly to new circumstances in both national and international contexts;
- master new technological procedures and processes;
- find new solutions and use a research approach to the design and manufacture of products that are connected to new techniques and the most advanced technologies;
- adopt a holistic approach to the development, manufacture and optimisation of products and installations, taking into account various factors such as functional properties, form, manufacture, assembly, economics, management, maintenance, environment;
- incorporate the findings of other disciplines into the broader field of mechanical engineering;
- demonstrate individual creative thinking;
- demonstrate coherent mastery of basic knowledge and integrate knowledge from various fields;
- place new information and interpretations in the context of the fundamental discipline;
- demonstrate understanding of the basic structure of the fundamental discipline and the links between its sub-disciplines;
- demonstrate understanding of and apply the methods of critical analysis;
- develop skills in the application of knowledge in a specific professional field;
- develop and use modern computer, information and communication technologies;
- lead group work and demonstrate mastery of communication within an organisation and outside it;
- take responsibility for managing highly complex work systems and develop a capacity for critical reflection.

Assessment and completion

Students' knowledge is assessed by means of practical exercises and seminar papers, and also via products, projects, performances, services, etc. and by examinations. 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 complete the following first-year course units: all three compulsory subjects in their chosen stream (18 credits), at least two elective subjects in their chosen stream (12 credits) and Research methods 1 (12 credits).
In order to progress to the third year, students must have completed all first-year course units (60 credits) and the following second-year course units: Individual research I (30 credits) and II (30 ECTS), which must be successfully presented to the competent chair.

Condition for obtaining certificate

In order to complete the third-cycle Mechanical Engineering programme, students must complete all course units, for a total of 180 credits (pass all examinations prescribed by the third-cycle Mechanical Engineering programme, complete research work and write and successfully defend a doctoral dissertation).

Awarding body

Faculty of Mechanical Engineering, University of Maribor

URL

http://www.fs.um.si/en/study/study-programme/third-cycle/