SLOVENSKO
OGRODJE
KVALIFIKACIJ

Magister inženir elektrotehnike/magistrica inženirka elektrotehnike

Selected qualifications

Name of qualification	Magister inženir elektrotehnike/magistrica inženirka elektrotehnike
Translated title (no legal status)	Master of Science in electrical engineering
Type of qualification	Diploma druge stopnje
Category of qualification	Izobrazba
Type of education	Master's education
Duration	2 years
Credits	120 credits

Admission requirements

Enrolment in the second-cycle Electrical Engineering programme is open to candidates who have completed:
• a first-cycle study programme in a relevant field: electricity and energy (522), electronics and automation (523), engineering (broad programmes – mechatronics, 520), industrial engineering – electrical engineering (522), physical science (broad programmes, 440) and physics and astronomy (441);
• a first-cycle study programme in another field: mathematics (461), computer science (481), chemical technology and process engineering (524), mechanics and metalwork (521) and building and civil engineering (582) – if prior to enrolment in the programme the candidate has completed course units essential for further study, totalling 18 ECTS credits. These course units may be completed during the first-cycle programme, during supplementary study programmes or by passing differential examinations before enrolment in the programme. Candidates must complete the following course units: the subjects Basics of electrical engineering I (7 ECTS credits) and Basics of electrical engineering II (5 ECTS credits) must be completed by all candidates; candidates enrolling in the Automation and Robotics stream must also complete the subject Signals (6 ECTS credits); candidates enrolling in the Electronics stream must also complete the subject Basics of electronics (6 ECTS credits); candidates enrolling in the Power Systems Engineering stream must also complete the subject Electrical and electromechanical converters (6 ECTS credits);
• a professional higher education programme, adopted before 11 June 2004, in a relevant field: electricity and energy (522), electronics and automation (523), physical science (broad programmes, 440) and physics and astronomy (441);
• a completed professional higher education programme, adopted before 11 June 2004, in another field: mathematics (461), computer science (481), chemical technology and process engineering (524), mechanics and metalwork (521) and building and civil engineering (582) – if prior to enrolment in the programme the candidate has completed course units essential for further study, totalling 18 ECTS credits. These course units may be completed during the first-cycle programme, during supplementary study programmes or by passing differential examinations before enrolment in the programme. Candidates must complete the following course units: the subjects Basics of electrical engineering I (7 ECTS credits) and Basics of electrical engineering II (5 ECTS credits) must be completed by all candidates; candidates enrolling in the Automation and Robotics stream must also complete the subject Signals (6 ECTS credits); candidates enrolling in the Electronics stream must also complete the subject Basics of electronics (6 ECTS credits); candidates enrolling in the Power Systems Engineering stream must also complete the subject Electrical and electromechanical converters (6 ECTS credits);
• an academic higher education programme, adopted before 11 June 2004, in a relevant field: electricity and energy (522), electronics and automation (523), engineering (broad programmes – industrial engineering, electrical engineering, 520), physical science (broad programmes, 440) and physics and astronomy (441). As a rule 60 ECTS credits are recognised for such candidates within the study programme and candidates may enrol in the second year of the programme if with these recognised course units they meet the conditions for transition laid down by an accredited study programme;
• an academic higher education programme, adopted before 11 June 2004, in another science or engineering field: mathematics (461), computer science (481), chemical technology and process engineering (524), mechanics and metalwork (521) and building and civil engineering (582). As a rule, 30 ECTS credits are recognised for such candidates within the study programme, and candidates may enrol in the corresponding year of the programme;
• a professional higher education programme, adopted before 11 June 2004, and a study programme leading to a specialisation, adopted before 11 June 2004, in a relevant field: electricity and energy (522), electronics and automation (523), physical science (broad programmes, 440) and physics and astronomy (441). As a rule 60 ECTS credits are recognised for such candidates within the study programme and candidates may enrol in the second year of the programme if with these recognised course units they meet the conditions for transition laid down by an accredited study programme.
• a professional higher education programme, adopted before 11 June 2004, and a study programme leading to a specialisation, adopted before 11 June 2004, in another field: mathematics (461), computer science (481), chemical technology and process engineering (524), mechanics and metalwork (521) and building and civil engineering (582). As a rule, 30 ECTS credits are recognised for such candidates within the study programme, and candidates may enrol in the corresponding year of the programme.

ISCED field	Field Tehnika, proizvodne tehnologije in gradbeništvo
ISCED subfield	subfield elektrotehnika in energetika
Qualification level	SQF 8 EQF 7 Second level

Learning outcomes

The qualification holder will be able to:

(general competences)

- use mathematical, scientific and computing knowledge to resolve engineering problems,
- use analytical, experimental and simulative methods to resolve practical problems within the field,
- analyse and synthesise complex problems in the field of electrical engineering with the aim of proposing technically optimal solutions, taking into account broader socio-economic consequences and restrictions,
- plan electrical engineering components, systems and processes that will satisfy set objectives and requirements in practice,
- integrate theoretical knowledge, research and development methods and modern planning tools in the resolution of complex engineering problems,
- give public presentations of technical, developmental, organisational and management solutions in written or oral form,
- demonstrate mastery of methods and techniques for autonomous research and analysis and evaluation of results,
- demonstrate autonomy in professional work, show a critical spirit and take responsibility for proposed solutions and
- establish and lead development groups, project groups and expert groups.

(subject-specific competences)

- demonstrate comprehensive understanding of the laws of physics in the field of electromagnetics and the capacity to develop new technological solutions,
- use information technology in various fields of electrical engineering (planning, systems control and management, communication),
- use analytical methods, models and simulation tools,
- demonstrate proficiency in the methods of planning installations and systems in the fields of power installations and systems, electronics, automation and robotics,
- analyse and evaluate devices and systems,
- demonstrate mastery of research and development methods,
- integrate knowledge from various engineering disciplines in new systemic solutions and technologies,
- demonstrate understanding of the laws and technology of energy-to-mass conversions in power systems processes and
- demonstrate understanding of laws and technologies in the field of signal-to-information conversions and flows in electronic systems, telecommunications and automatic control systems.

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

Students progress to the second year if they have met first-year requirements and accumulated at least 42 ECTS credits.

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 in all subjects in which they have enrolled, and write and defend a master's thesis.

Awarding body

Faculty of Electrical Engineering and Computer Science, University of Maribor

URL

https://feri.um.si/en/