Programme Description

Master in Electrical Engineering

TAMEL – Fall 2025

Decision taken by	Department board
Document contact	Boel Ekergård, Head of Programme
Version	
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This template for programme descriptions was adopted by the Research and Education Board, HV 2022/508, 21 September 2022, editorial change 25 October 2022. Programme description is a supplement to the programme syllabus which is the legally binding document.

Basic data

Department	Department of Engineering Science
Division	Division of Electrical Engineergin
Name of Programme, Swedish	Magister i Elektroteknik
Name of Programme, English	Master in Electrical Engineering
HE credits (number of credits)	60
Level (1st Cycle, 2nd Cycle)	2nd Cycle
Entry requirements, Swedish	Kandidatexamen inom elektroteknik eller motsvarande, alternativt en motsvarande högskoleingenjörsexamen inom maskinteknik. I utbildningen på grundnivå skall minst 5 hp programmering samt 15 hp matematik ingå. Engelska 6 eller motsvarande.
Entry requirements, English	Degree of Bachelor of Science in electrical engineering or equivalent. Additionally, the Bachelor of Science degree must be comprised of a minimum of 5 HE credits in programming and 15 HE credits in mathematics. In addition, verified knowledge of English corresponding to the course English 6 in the Swedish Upper Secondary School or equivalent.
Main field of study, Swedish	Elektroteknik
Main field of study, English	Electrical Engineering
Degree, Swedish	Teknologie magisterexamen i elektroteknik
Degree, English	Degree of Master of Science (60 credits) within Electrical Engineering
Rate of study (full-time, part-time)	Full-time
Type of instruction (on campus, distance teaching)	Campus
Language of instruction (Sw, Eng)	English

General programme information

The higher education engineering program, Master in Electrical Engineering 60 credits, with two clear tracks: Electrical Power System and Electrical Engineering. The program only contains program-unique courses and has been discussed and anchored with industry representatives from the industry. The programme is offered at campus for national and international students and is only given English.

Programme contents, structure, and progression

Master in Electrical Engineering addresses students with a bachelor within electrical engineering. After completing the programme you will receive a one year master within electrical engineering.

The programme is divided in to four study periods. The purpose with the first study period is to provide knowledge within the area of electrical engineering, an understanding of the electrical system in both power systems and electrical vehicles.

Within study period two and three, the program includes advanced courses in the two different tracks, for examples sustainability, control systems, EMC, electrical measurement technology and electrical systems. The final study period focuses on an independent work (the degree project) in the field of technology, in accordance with the Higher Education ordinance guidelines.

The research basis for the programme

Postgraduate education and internationally competitive research in the area began to be built up at Högskolan Väst in 2019. Until the spring of 2024, the research group has grown and research is now conducted in all the vital parts of the electric driveline and electrical power system. As the researchers are involved and teach and/or supervise within the programme, the research is woven in a very natural way into both courses and degree projects and gives the students additional opportunities to deepen their knowledge within the absolute cutting edge of the research area.

The labour market, collaboration, and work-integrated learning[1]

Collaborative companies and players in the automotive and power system industry were included within the design of the programme and further informed about the opportunities for skill development of existing personnel which this programme provides.

According to forecasts, Europe will lead the transition to the propulsion of electrical vehicles. In Europe there is a large automotive industry, which, like Sweden, will have a great need for new engineers with a focus on electricity. Education which matches this need will thus be sought after by students not only in Sweden but also in and outside Europe.

Through company visits, labs both on campus and in companies and with lecturers from industry, work-integrated learning is woven into the education in a very natural way.

Sustainable development

The program offers the knowledge within the electrical power systems electrification of the transport sector which the companies asking for and currently has an acute shortage of. Sustainable development is, within this area, very clear as electrification dramatically reduces the use of fossil fuels and the emissions they entail and resource consumption, as an electric powertrain has up to 4 times the efficiency of a powertrain based on fossil-fuel. Further, the clear and natural sustainability focus in the program also leads to an increasing interest in engineering for female students and female employees - we therefore believe that the programme will lead to increased search pressure from female students and, in the next step, recruitment of female staff.

Further, as all technical solutions needs to be economical, Master in Electrical Engineering includes work related to economical sustainability.

[1] Work-integrated learning is a pedagogical practice in which students' learning takes place through the integration of theoretical and practical knowledge and experience, derived from an educational context within the framework of both higher education as a work environment and civil society.

Internationalisation

The programme is offered as both campus and distance education for national and international students and given only in English. In terms of experience, it has been shown that increased accessibility in the education programs benefits female applicants.