

Master in Electric Vehicle Engineering, 60 HE credits

Magister i Elfordonsteknik, 60 hp

Programme code: TAEVE

Higher education qualification: Degree of Master of Science (60 credits) with specialization in Electrical Vehicle Engineering

Cycle: Second cycle

Established: 2021-09-28

Established by: Department of Engineering Science

Applies for: H22

Courses that the study programme comprises

By main field of study: Electrical Engineering:

GEE100, Basics of Electrical Engineering for electric vehicles, 7,5 HE credits, G1F

RSE100, Guidelines for safety when working on and in electric vehicles, 2,5 HE credits, G1F

IKE100, Introduction to Electric Vehicle Systems and Components, 5 HE credits, G1F

EME600, Electrical Measurement for electric vehicles, 5 HE credits, A1N

KRE600, Power Electronics, 5 HE credits, A1N

By main field of study: Mechanical Engineering:

EFE600, Electric Machines for electric vehicles, 7,5 HE credits, A1N

EMK600, Electromagnetic compatibility, 2,5 HE credits, A1N

EDS600, Electrical Drive Systems, 5 HE credits, A1F

LIE600, Storage Systems in Electric Vehicles, 5 HE credits, A1F

EXE700, Degree Project in Electric Vehicle Technology, 15 HE credits, A1E

Entry requirements

Degree of Bachelor of Science in mechanical 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.

Other regulations

Requirements within the program

To access the course Master thesis 15 credits, completed result of 30 credits within the program is required.

A student who has been admitted to a programme with this programme syllabus is guaranteed a place on courses according to the study plan below, provided that the student follows the programme according to the study plan. The study plan and its courses may however be subject to change, within the framework of the qualitative targets, when revisions of education plans and syllabi are being made. Should the programme involve choosing a specialization, the student is guaranteed a place on courses concerning the chosen specialization.

Qualitative target

National outcomes

Degree of Master (60 credits) [Magisterexamen]

Scope

A Degree of Master (60 credits) is awarded after the student has completed the courses required to gain 60 credits with a defined specialisation determined by each higher education institution itself, of which at least 30 credits are for specialised study in the principal field (main field of study) of the study programme. In addition the prior award of a Degree of Bachelor, a Degree of Bachelor of Fine Arts, a professional or vocational qualification of at least 180 credits or a corresponding qualification from abroad is required.

The requirement of the prior award of a qualification may be waived for a student admitted to the programme without the basic entry requirement in the form of a qualification. This does not, however, apply if a waiver was granted during admission pursuant to the second paragraph of Section 28 of Chapter 7 on the grounds that the qualification had not yet been issued.

Outcomes

Knowledge and understanding

For a Degree of Master (60 credits) the student shall

- demonstrate knowledge and understanding in the main field of study, including both an overview of the field and specialised knowledge in certain areas of the field as well as insight into current research and development work, and
- demonstrate specialised methodological knowledge in the main field of study.

Competence and skills

For a Degree of Master (60 credits) the student shall

- demonstrate the ability to integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information
- demonstrate the ability to identify and formulate issues autonomously as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames
- demonstrate the ability in speech and writing to report clearly and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences, and
- demonstrate the skills required for participation in research and development work or employment in some other qualified capacity.

Judgement and approach

For a Degree of Master (60 credits) the student shall

- demonstrate the ability to make assessments in the main field of study informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Independent project (degree project)

A requirement for the award of a Degree of Master (60 credits) is completion by the student of an independent project (degree project) for at least 15 credits in the main field of study.

Miscellaneous

Specific requirements determined by each higher education institution itself within the parameters of the requirements laid down in this qualification descriptor shall also apply for a Degree of Master (60 credits) with a defined specialisation.